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The Systematic Positions of Some Buprestid Genera (Coleoptera, Buprestidae)

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Abstract The Chalcophorinae is regarded as a synonym of the buprestid subfamily Buprestinae. Four new tribes, Exagistini, Pseudoperotini, Iridotaenini and Evidini, are established in the subfamily Buprestinae. The genus *Pelecopselaphus* SOLIER, 1833, is transferred to the tribe Agaeocerini from the Chalcophorini. The tribe Paratrachyini is transferred to the subfamily Trachyinae from the subfamily Polycestinae.

In the course of my systematic study on the buprestid beetles, it was found that there were some wrong classifications on the buprestid genera.

The subfamily Chalcophorinae is herewith regarded as a synonym of the Buprestinae, since the so-called diagnostic features separating the two subfamilies vary continuously and gradually from one to the other. On the other hand, some authors are of the opinion that the wing venation presents the most important characteristics in the higher classification of the Buprestidae. I have also tried to classify buprestid genera on the basis of this feature. The above synonymy is strongly supported by the characteristics of wing venation. Four new tribes, Exagistini, Pseudoperotini, Iridotaenini and Evidini, will be established though certain confusion still remains in the Buprestinae.

On the other hand, the systematic position of the genus *Paratrachys* SAUNDERS, 1873, has not been settled till now. Recently, I was able to examine some larvae of *Paratrachys hederae* SAUNDERS, 1873. Judging from the larval characteristics, it is apparent that *Paratrachys* should be classified in the Trachyinae and be regarded as the most archaic of the trachyine genera.

Before going further, I wish to express my deep gratitude to Dr. Yoshihiko KUROSAWA for his constant guidance, and to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his critical reading of the original manuscript. I am also indebted to Dr. Svatopluk BÍLÝ of the National Museum of Natural History, Prague, for his kind help during the course of this study. Thanks are also due to Messrs. Masaro EJIMA, Shoichi IMASAKA and Masao ITOH for their kind offer of materials.

Subfamily **Buprestinae** ESCHSCHOLTZ, 1829

Buprestides ESCHSCHOLTZ, 1829, Zool Atlas, 8–9.
Chalcophorides LACORDAIRE, 1857, Gen. Coléopt., 14–15.

Two subfamilies Buprestinae and Chalcophorinae are divided mainly by the distribution of sensory pores on the serrate antennal segments. It has been said that the pores concentrate in the sockets on the ventral surface of the serrate segments in the Buprestinae, and are evenly diffused on both sides of them in the Chalcophorinae. In the genus *Hippomelas* Laporte et Gory, 1837, however, the pores are diffused on both sides and concentrate in the fossae. In the genus *Evides* Thomson, 1878, the pores concentrate in very large sockets on both sides of the serrate segments. These two genera have been currently classified in the subfamily Chalcophorinae, but the antennal structure shows an intermediate condition between the two subfamilies. It is, therefore, probable that the change of antennal structure is progressive and cannot serve as a diagnostic character separating the two subfamilies. Thus, the Chalcophorinae is treated herewith as a synonym of the Buprestinae.

On the other hand, the tribe Psilopterini is closely related to the tribe Dicercini mainly in view of the peculiarity of wing venation, though they have been classified into different subfamilies, the Chalcophorinae and Buprestinae. The tribes Chalcophorini and Chrysochroini are also related to the tribe Buprestini for the same reason.

Tribe **Exagistini** nov.

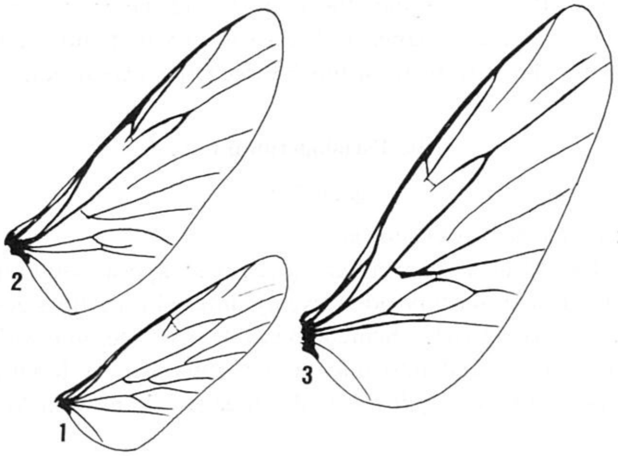
(Fig. 1)

Frons not concave medially; antennal cavities rather small and subtriangular; clypeal suture absent. Antennae eleven-segmented; sensory pores evenly diffused on both sides of serrate segments. Maxillary palpus with the last segment not enlarged apically. Prosternum without gular lobe. Sternal cavity formed by mesosternum medially and by metasternum laterally. Abdomen with eight visible tergites, which are not divided into mid- and paratergites by longitudinal lateral grooves. Legs slender; posterior tarsi with the first segments about as long as the following two united.

Hind wing with a radial cell, vein R_S not joining vein M, cross vein (r-m) visible, and anal cell absent.

Remarks. The present tribe includes only the genus *Exagistus* H. Deyrolle, 1864, which has been placed in the tribe Melanophilini. It is easily distinguished from the latter tribe by the following features of wing venation: anal cell absent, instead of being distinctive. It is also closely allied to the tribe Dicercini, but is easily distinguished from it by the following characteristics: 1) antennal cavities small, instead of being large; 2) antennae with sensory pores evenly diffused on both sides of serrate segments, while in the Dicercini, they concentrate in the terminal sockets on the ventral surface of serrate segments; 3) maxillary palpus with the last segment not enlarged apically, while in the Dicercini, they are strongly enlarged apicad.

The present new tribe is classified into the Psilopterini–Dicercini tribal group in view of the characteristics of wing venation. This group is distinguished from the other tribal groups of the subfamily Buprestinae except for anthaxine tribes by the following characteristics of wing venation: 1) anal cell absent; 2) vein $2dA_3$ fully developed, reaching the margin.



Figs. 1–3. Hind wings. —— 1, *Exagistus brunneus* Fisher, 1930; 2, *Pelecopselaphus depressus peruvianus* Théry, 1911; 3, *Iridotaenia sulcifera* E. Saunders, 1874.

Tribe **Agaeocerini** Nelson, 1982

Agaeocerini Nelson, 1982, Coleopt. Bull., **35**: 431–450.

Genus ***Pelecopselaphus*** Solier, 1833

(Fig. 2)

Pelecopselaphus Solier, 1833, Annls. Soc. ent. Fr., **2**: 286–287.

Frons with a distinct median groove; clypeus short, depressed, and not separated from frons; antennal cavities small; antennae with sensory pores diffused on both sides and concentrated in terminal sockets on the ventral surface of serrate segments; maxillary palpi very compact. Pronotum with the basal margin slightly sinuate, marginal carinae entire. Scutellum visible. Prosternum without gular lobe. Sternal cavity formed by mesosternum medially and by metasternum laterally. Hind-wing with the vein R_S not joining vein M, cross vein (r-m) visible, anal cell absent.

Remarks. The tribe Agaeocerini was established on the basis of the American genus *Agaeocera* Waterhouse, 1882, alone. However, judging from the characteristics mentioned above, mainly from the characteristics of wing venation, *Pelecopselaphus* must be transferred from the tribe Chalcophorini to the tribe Agaeocerini. In the Agaeocerini, the anal cell on the hind-wing is absent, while in the Chalcophorini, it is distinct.

This tribe is distinguished from the others of the subfamily Buprestinae by the following characteristics of wing venation: 1) anal cell absent; 2) vein $2dA_3$ distinctly short, and not reaching the margin; 3) vein R_S not directly joining vein M; 4) cross vein (r-m) visible. It is similar to the tribe Chalcophorellini in the wing venation, but in that tribe, the vein R_S directly joins the vein M, and the cross vein (r-m) is absent. These features may, however, change rather easily, so that more intensive study is needed for clarifying the true relationship between the two tribes.

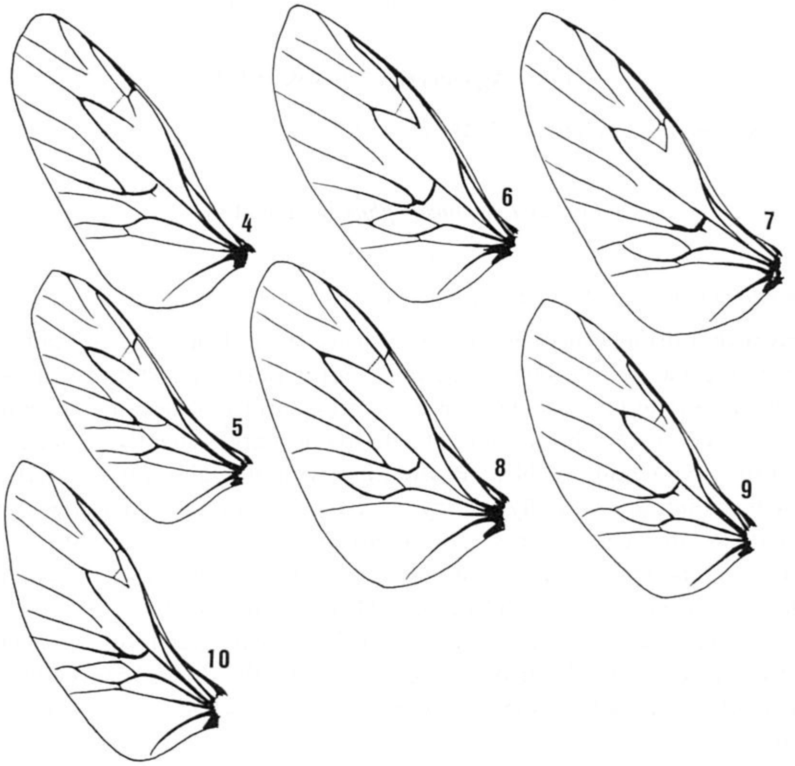
Tribe **Pseudoperotini** nov.

(Figs. 6, 7, 10)

Type genus: *Pseudoperotis* Obenberger, 1936.

Frons without small pores near antennal cavities; clypeal suture absent. Antennae eleven-segmented, with sensory pores evenly diffused on both sides of serrate segments. Maxillary palpi compact. Scutellum visible. Prosternum without gular lobe. Abdominal tergites not divided into mid- and paratergites by longitudinal grooves. Hind wing with radial and anal cells, vein R_S directly joining vein M, and cross vein (r-m) visible.

Remarks. Although the genus *Pseudoperotis* Obenberger, 1936, has been regard-



Figs. 4–10. Hind wings. —— 4, *Oedisterna cuprea* (Linné, 1758); 5, *Strandissa vansoni* Obenberger, 1936 (syntype); 6, *Pseudoperotis scabrosula* Obenberger, 1924; 7, *Pseudoperotis subviolacea* (Péring, 1886); 8, *Fahraeusia chalcea* Obenberger, 1936 (holotype); 9, *Chalcopoecila ornata* (Gory, 1840); 10, *Hypoprasis harpagon* Fairmaire et Germain, 1864.

ed as a subgenus of the psilopterine genus *Oedisterna* LACORDAIRE, 1857, it is distinctly separable from it by the following characteristics of wing venation: anal cell distinct, instead of being absent. This feature is very important in the classification of the Buprestidae, so that the genera *Pseudoperotis* and *Oedisterna* must belong to different tribes.

The present new tribe is distinguished from the tribe Chalcophorini by the following characteristics: cross vein (r-m) visible, instead of being absent. It is also distinguished from the tribe Buprestini by the following characteristics: 1) vein R_S directly joining vein M, instead of being separated; 2) antennal sensory pores evenly diffused, instead of concentrating in sockets.

Some South American genera are doubtless closely related to the present tribe. Further studies on these genera are awaited. One of them, *Hypoprasis* FAIRMAIRE et GERMAIN, 1864, is herewith transferred to the present tribe from the tribe Chalcophorini.

Genus ***Pseudoperotis*** OBENBERGER, 1936, stat. nov.

Pseudoperotis OBENBERGER, 1936, Festschr. Embrik Strand, 1: 115, 118 (subgenus of *Oedisterna* LACORDAIRE, 1857). Type species: *Psiloptera scabrosula* OBENBERGER, 1924 (Original designation.)

Although this genus was described as a subgenus of *Oedisterna* LACORDAIRE, 1857, it is easily distinguished from it by wing venation. It is divided into the two subgenera: *Pseudoperotis* (s. str.) and *Retopis* subgen. nov.

Subgenus ***Retopis*** nov.

Type species: *Psiloptera subviolacea* PÉRING, 1886.

Differing from the subgenus *Pseudoperotis* OBENBERGER, 1936, in the following point: cross vein (r-m) lying outside of cross vein (r-r), instead of being inside of it.

Tribe **Iridotaenini** nov.

(Fig. 3)

Type genus: *Iridotaenia* DEYROLLE, 1864.

Frons longitudinally and strongly concave, with a distinct median groove, and without small pores near antennal cavities. Antennae with sensory pores evenly diffused on both sides of serrate segments. Maxillary palpi rather compact, with the last segment distinctly enlarged apically. Sternal cavity formed only by mesosternum. Legs slender; posterior tarsus with the first segment about as long as the following two united.

Hind wing with vein R_S not joining vein M, vein $1^{st}A_1$ visible, and cross vein (r-m) visible, radial and anal cell visible.

Remarks. The present new tribe is related to the tribe Pseudoperotini nov., but can be distinguished from it by the following characteristics: 1) frons distincly concave, instead of being simple; 2) vein R_S not joining vein M, instead of directly joining vein M. It is also disinguished from the tibe Chalcophorini by the following characteristics: 1) maxillary palpi rather compact, with the last segment distinctly enlarged apically, while in the Chalcophorini, they are lose and the last segment is elongate; 2) hind wing with vein R_S not joining vein M, and cross vein (r-m) visible, while in the Chalcophorini, vein R_S directly joining vein M, and cross vein (r-m) absent. The African genus, *Parataenia* Kerremans, 1892, must also be included in the present tribe.

The American genus *Hippomelas* Laporte et Gory, 1837, also bears the same wing venation as this tribe, but its maxillary palpi are distinctly elongate. It should be separated from the tribe Chalcophorini.

Tribe **Evidini** nov.

Type genus: *Evides* Thomson, 1878.

Frons without small pores near antennal cavities. Antennae with sensory pores concentrating in large sockets on the both sides of serrate segments. Maxillary palpi rather compact. Hind wing with vein R_S not joining vein M, vein $1^{st}A_1$ visible, and cross vein (r-m) visible, radial and anal cell visible.

Remarks. The present new tribe is closely related to the tribe Iridotaenini nov., but can be distinguished from it by the following characteristics: antennal sensory pores concentrating in large sockets on both sides of serrate segments, instead of being evenly diffused on both sides of serrate segments. It is distinguished from the tribe Chalcophorini by the following characteristics: 1) hind wing with vein R_S not joining vein M, and cross vein (r-m) visible, while in the Chalcophorini, vein R_S directly joining vein M, and cross vein (r-m) absent. It is also distinguished from the tribe Buprestini by the following characteristics: antennal sensory pores concentrating in large sockets on both sides of serrate segments, while in the Buprestini, they concentrate in terminal sockets only on the ventral surfaces of serrate segments.

Tribe **Buprestini** Eschscholtz, 1829

Buprestides Eschscholtz, 1829, Zool Atlas, 8–9.

Genus ***Fahraeusia*** Obenberger, 1936, stat. nov.

(Fig. 8)

Fahraeusia Obenberger, 1936, Festschr. Embrik Strand, 1: 115–116, 118 (subgenus of *Oedisterna* Lacordaire, 1857). Type species: *Oedisterna* (*Fahraeusia*) *chalcea* Obenberger, 1936. (Original designation.)

Although the present genus has been regarded as a subgenus of *Oedisterna* Lacordaire, 1857, it is clearly different from it in the following characteristics: 1) antennal sensory pores concentrating in terminal sockets on the ventral surface of serrate segments, instead of being evenly diffused; 2) anal cell on hind wing distinct, instead of being absent. Judging from these characteristics, the present genus is not a member of the tribe Psilopterini. Though the first posterior tarsal segment is distinctly shorter than those in the other genera, *Fahraeusia* is provisionally classified into the tribe Buprestini.

This genus is closely related to some South American genera of the tribe Buprestini. Its short first segment of posterior tarsus suggests that it is the most archaic genus within the genus-group.

Genus ***Chalcopoecila*** THOMSON, 1878

(Fig. 9)

Chalcopoecila THOMSON, 1878, Typi Bupr. Mus. Thoms., 37. Type species: *Psiloptera ornata* GORY, 1840. (Original designation.)

Although currently placed in the tribe Discercini, this genus is clearly different from all the dicercine genera by the wing venation. The tribe Dicercini is characterized by the absence of an anal cell, whereas *Chalcopoecila* has a distinct anal cell. The latter is, therefore, transferred to the tribe Buprestini from the tribe Dicercini.

Subfamily **Trachyinae** GORY et LAPORTE, 1840

Tribe **Paratrachyini** COBOS, 1980, stat. nov.

Paratrachysae COBOS, 1980, Eos, **54**: 46–47.
Paratracyinae Y. KUROSAWA, 1985, in KUROSAWA, Y. *et al.*, Coleopt. Japan Col., Osaka, **3**: 2.

The genus *Paratrachys* E. SAUNDERS has been classified into the tribe Ptosimini of the subfamily Polycestinae. COBOS erected Paratrachysae as one the of genus-groups of the Ptosimini. It is treated herewith as a full tribe of the subfamily Trachyinae for reasons given below.

Genus ***Paratrachys*** E. SAUNDERS, 1873

(Figs. 11, 12)

Paratrachys E. SAUNDERS, 1873, J. Linn. Soc. Zool. Lond., **9**: 523. Type species: *Paratrachys hederae* E. SAUNDERS, 1873, by monotypy.

Imago. Body small but robust. Head distinctly narrower than the base of pronotum; frons not concave, without small pores just above antennal cavities; eyes subparallel; clypeal suture absent; antennal cavities small; antennae eleven-segmented, with sensory pores concentrating in terminal sockets on the ventral surface of serrate segments. Pronotum evenly convex; anterior margin slightly bisinuate; posterior margin subtruncate; marginal carinae sharply defined throughout. Scutellum triangular. Elytra convex, without distinct costae or striae. Prosternum without gular lobe; procoxal lines rather strongly divergent anteriorly. Mesosternum completely separated. Metasternum convex, and obsoletely grooved medially. Abdomen with less sclerotized tergites not divided by longitudinal grooves. Hind wing with less sclerotized subquadrate radial cell, vein R_S not joining vein M, cross vein (r-m) and anal cell absent, vein P_{CU} visible but very inconspicuous, vein $1A_{1+2}$ visible. Male genitalia without hairs on the apical parts of lateral lobes.

Larva (middle instar). Body elongate, entirely milky-white, lustrous, widest at mesothorax, always strongly bent to the left in dorsal aspect when alive; all the segments with pubescence laterally. Head small, retractable into prothorax; mandibles well sclerotized, simple, short and robust. Pronotum with subquadrate plate, but the plate is not sclerotized. Prosternum with subquadrate and not sclerotized plate divided into two parts by the median line. Mesothorax slightly broader than pro- and metathoraces, and without any plate. Metathorax without any plate, either. Abdomen ten-segmented, narrower than thoraces, without any plate; first segment the widest; the last slightly emarginate at apex, but without spines. Leaf miner.

Remarks. The above description of the larva is based on the following materials: *Paratrachys hederae* E. SAUNDERS, 1873: 13 exs. (middle instar larvae), Mt. Kazakashirayama, Nagasaki City, Nagasaki Pref., Japan, 28. XII. 1983, M. EJIMA lgt. (Host plant: *Ficus pumila* LINN.)

The following relationships between this and other tribes are observed in some structures.

Frons. The small pores just above antennal cavities are lacking in the present

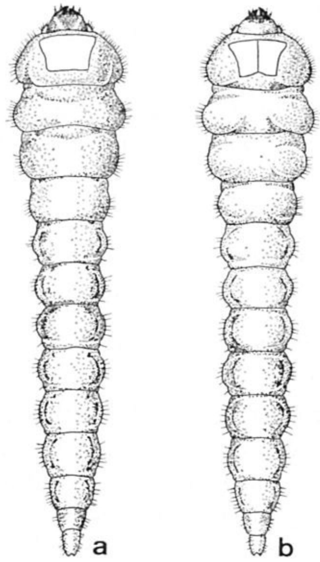


Fig. 11. Middle instar larva of *Paratrachys hederae* E. SAUNDERS, 1873. —— a) Dorsal view; b) ventral view.

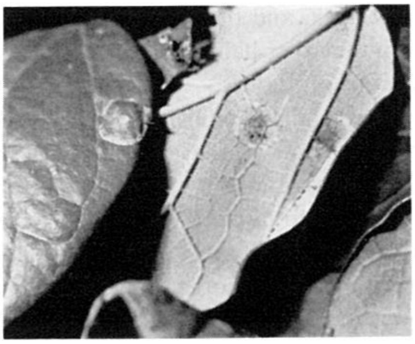


Fig. 12. Mining trace of *Paratrachys hederae* E. SAUNDERS, 1874. (In winter.)

tribe. Generally, these pores are distinctive in the Agrilinae–Trachyinae subfamilial group excepting some aberrant genera. All the genera belonging to other subfamilies except for stigmoderid genera lack such pores on frons

Prosternum. The procoxal lines are distinct in the present tribe. They are distinct only in the subfamilies Trachyinae and Mastogeniinae with some exceptions. No genera of other subfamilies have such lines.

Abdominal tergites. The abdominal tergites of the present tribe are less sclerotized and not divided into mid- and paratergites by lateral longitudinal grooves. On the other hand, in all the genera belonging to the Agrilinae–Trachyinae group, they are strongly sclerotized and distincly divided into mid- and paratergites by lateral longitudinal grooves, though only the tribe Aphanisticini JACQUELIN DU VAL[1] has less sclerotized and not divided abdominal tergites. The abdominal tergites are longitudinally and narrowly membraneous along the sides and less sclerotized at middle in the mastogeniine and some anthaxine genera (*Anthaxia* ESCHSCHOLTZ, 1829, and *Melanophila* ESCHSCHOLTZ, 1829,[2] etc.). Generally, all the genera belonging to the Polycestinae–Buprestinae subfamilial group have well sclerotized and not divided tergites, though some acmaeoderine and anthaxine genera have less sclerotized tergites, which are not membraneous laterally. The genera, whose abdominal tergites are longitudinally and narrowly membraneous along the sides and less sclerotized at middle, are most archaic in the Buprestidae.

Male genitalia. The lateral lobes of the male genitalia are devoid of hairs at the apical parts in the subfamilies Mastogeniinae, Acmaeoderinae and Polycestinae. The present tribe is also characterized by hairless lateral lobes, though the members of the Trachyinae have haired ones.

Larva. The paratrachyid larva is a leaf miner, being elongate, widest at mesothorax, and not bispinose at apex, and the pronotum bears unsclerotized subquadrate plate and not grooved. On the other hand, the larvae of the Polycestinae–Buprestinae subfamilial group are widest at prothorax.

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[1] Though two genera, *Endelus* H. DEYROLLE, 1864, and *Anthaxomorphus* H. DEYROLLE, 1864, have been classified into the tribe Aphanisticini, they have well sclerotized and divided abdominal tergites. They must be separated from the tribe.

[2] Some Central and South American species have well sclerotized abdominal tergites. A new genus should be erected for them.

The present tribe was originally established by A. Cobos in 1980 as one of the genus-groups of the tribe Ptosimini in the subfamily Polycestinae. It is, however, easily distinguished from the Polycestinae by the following characteristics: 1) procoxal lines on prosternum distinct, instead of being absent; 2) hind wing with less sclerotized large subquadrate radial cell, while in the Polycestinae, it has an elongate and not sclerotized cell; 3) larva widest at mesothorax, and without sclerotized groove on pronotum, while in the Polycestinae, it is widest at the prothorax, and bears a distinct groove on the pronotum.

Judging from the characteristics mentioned above, especially from the larval characteristics, the present tribe should be classified into the subfamily Trachyinae as its most archaic representative, and the subfamily Mastogeniinae may be the most archaic subfamily in the Buprestidae. The present tribe may also be regarded as an intermediary between the Mastogeniinae and Trachyinae.

Although the systematic position of some tribes belonging to the Trachyinae is very doubtful, the present tribe is distinguished from all the other tribes of the Trachyinae by the following characteristics: 1) frons without small pores just above antennal cavities, instead of bearing the pores; 2) clypeal suture absent; 2) abdominal tergites less sclerotized and not divided, instead of being well sclerotized and divided by longitudinal grooves.

摘　　要

タマムシ科のタマムシ亜科 Buprestinae とウバタマムシ亜科 Chalcophorinae の2亜科について，従来これらの区別点とされていた特徴が両亜科間で連続的に変化することから，後者を前者のシノニムとして扱った．また，本亜科に含まれる数属について，その所属する族の変更を行なった．

さらに，従来 Polycestinae 亜科の Ptosimini 族に含まれていた *Paratrachys* 属を，おもに幼虫の形態的特徴からチビタマムシ亜科 Trachyinae のツブタマムシ族 Paratrachyini に置いた．

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Elytra, Tokyo, **15** (1/2): 12–18. November 7, 1987

Taxonomic Study on the Subfamily Osoriinae (Coleoptera, Oxytelidae) from Japan, II*

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Abstract This is the second part of a revision of the subfamily Osoriinae of Japan. Two genera, *Mimogonus* FAUVEL and *Saegerius* FAGEL are dealt with, and the latter genus is discovered for the first time from Japan. Descriptions of two new species, *Saegerius japonicus* and *S. yasutoshii*, are presented.

Genus ***Mimogonus*** FAUVEL

Mimogonus FAUVEL, 1903, Rev. Ent., **22**: 261; BERNHAUER & SCHUBERT, 1911, Coleopt. Cat., (29): 141; CAMERON, 1920, Trans. ent. Soc. Lond., p. 351; NOTMAN, 1925, Proc. U. S. natn. Mus., **67**: 2; CAMERON, 1930, Fn. Brit. India, Coleopt. Staph., **1**: 304; SCHEERPELTZ, 1933, Coleopt. Cat. Suppl., (129): 1129; FAGEL, 1955, Expl. Parc natn. Upemba, Miss. Witte, (39): 16; FAGEL, 1959, Expl. Parc natn. Garamba, Miss. Saeger, (12): 9; FAGEL, 1969, Mus. roy. Afr. centr., Terv. Belg. Annls. 8°, (Sci. zool.), (173): 11; COIFFAIT, 1979, Fn. Madagascar, **51**: 10. (Type species: *Osorius fumator* FAUVEL, designated by LUCAS, 1920).

Body small, elongate, shiny.

Head (Fig. 1 A) large, hexagonal. Antennae straight, 11-segmented, weakly broadened apically. Labrum transverse, with anterior margin rounded, sparsely haired. Mandibles robust, each pointed at apex, with two small pointed teeth; mandibular molas and prosthecae present. Maxillae weakly sclerotized; lacinia elongate, with inner margin sparsely setaceous; galea broader than lacinia; maxillary palpus 4-segmented, thick, 4th segment about 3.5 times as long as 3rd, cuspidate. Labium with mentum trapezoidal, about as long as broad; ligula composed of a plate, with anterior margin rounded; labial palpus 3-segmented, 3rd segment longer than 2nd.

Prothorax constricted at base, pronotum with a pair of deep foveae near postero-lateral corners; hypomera broad, projecting inward behind fore coxae; hypomerosternal sutures absent; prosternum with pointed intercoxal process. Mesothorax with prepectus broad; mesepisterna, mesepimera and mesosternum connate into a plate which is a little narrower than metasternum, intercoxal process pointed; mid coxal cavities completely separated, moderately large in size. Metathorax with metepisterna partially fused with metepimera; metasternum with anterior intercoxal process pointed. Metendosternite Y-shaped, with apical parts of furcal arms each bifurcate.

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* Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 3, No. 218).

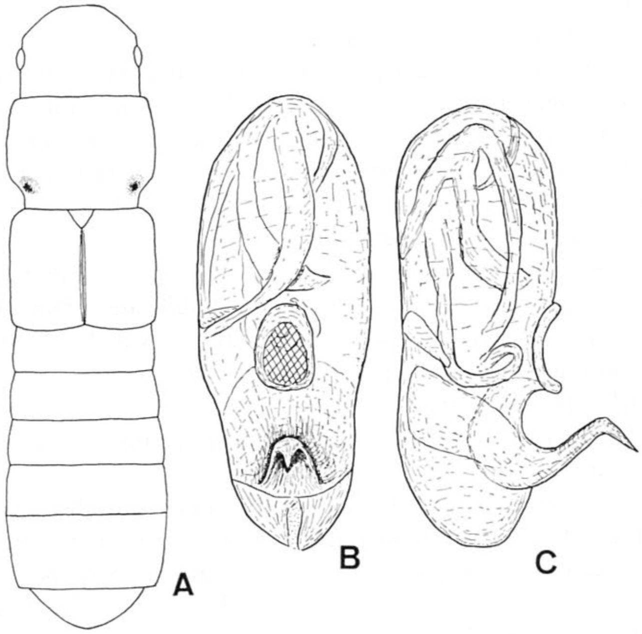

Fig. 1. *Mimogonus microps* (Sharp). —— A, Whole body; B, male genitalia in ventral view; C, male genitalia in lateral view.

Elytra parallel-sided; elytral epipleura distinct, broad. Legs relatively short; anterior four tibiae weakly broadened apically, furnished only with hairs and small spines on outer margins; tarsal formula 5–5–5, 5th tarsomere longer than 1st to 4th taken together.

Abdomen broadened posteriorly, broadest at 7th segment; 3rd sternum with a basimedian longitudinal keel.

Male. Ninth tergum composed of a pair of separated plates, with ventral struts very thin; 9th sternum absent; 10th tergum entire, posterior margin sparsely haired. Genitalia with median lobe elongate-oval; parameres fused into a curved stalk.

Remarks. This genus is related to *Saegerius* Fagel, but is separable from the latter by the pronotum with a pair of foveae near the posterolateral corners and the parameres of the male genitalia fused into a curved stalk.

Mimogonus microps (Sharp)

(Fig. 1)

Osorius microps Sharp, 1889, Annls. Mag. nat. Hist., (6), **3**: 412.

Mimogonus microps: Bernhauer & Schubert, 1911, Coleopt. Cat., (29): 141; Adachi, 1957, J. Tôyô Univ., (11): 193; Shibata, 1976, Annual Bull. Nichidai Sanko, (19): 168; Watanabe, 1985, Coleopt. Japan Col., Osaka, **2**: 275.

Body length: 2.0–3.0 mm.

Body yellowish to yellowish red, shiny.

Head (Fig. 1 A) narrower than pronotum, frons narrowed and weakly deflected anteriorly; surface irregularly shallowly punctured, punctures round and umbilicate. Eyes small, about 0.7 times as long as temporal regions. Antennae thick, long, reaching the posterior 3/4 of pronotum, 1st segment about as long as 2nd and 3rd taken together, 3rd longer than 4th, 4th to 10th moniliform, gradually broadened apically, 11th about twice as long as 10th, rounded at apex.

Pronotum transverse, constricted at base, with a pair of foveae near posterolateral corners; surface minutely reticulate and densely umbilicately punctured except for median longitudinal line which is smooth and weakly elevated. Mesoscutellum subtriangular, distinctly minutely alveolate. Elytra as long as pronotum, parallel-sided, coarsely obsoletely punctured, sparsely haired.

Abdomen broadened posteriorly, indistinctly punctured, densely covered with short yellowish hairs.

Male. Eighth sternum with a semicircular impression in the middle of posterior margin. Genitalia (Fig. 1 B–C) moderately sclerotized; median lobe elongate-oval, weakly narrowed apically, with rounded apex; parameres S-shaped in lateral view, broad and partially fused with median lobe at basal part, constricted near the middle, then narrowed toward pointed apex.

Specimens examined. 3 exs., Hiratsuka, Kanagawa Pref., 12. viii. 1960, Y. SHIBATA leg.; 1 ex., Tamagawa, Tokyo, 18. v. 1960, K. SAKUMA leg.

Distribution. Japan (Honshu, Kyushu), Taiwan, China.

Remarks. This species is allied to *Mimogonus fumator* FAUVEL, 1889, but is separable from the latter by the body yellowish, the 4th to 10th segments of the antenna moniliform, and the elytra as long as the pronotum.

Genus ***Saegerius*** FAGEL

Saegerius FAGEL, 1959, Expl. Parc natn. Garamba, Miss. Saeger, (12): 18. (Type species: *Saegerius garambanus* FAGEL, by original designation).

Body small, elongate, moderately shiny.

Head (Fig. 2 A) large, parallel-sided behind small eyes. Antennae weakly geniculate, 11-segmented. Labrum transverse, with anterior margin rounded, sparsely haired. Mandibles robust, pointed at apices, left mandible with a blunt tooth, right one with two pointed teeth on inner margin; molas strongly sclerotized; mandibular prosthecae brush-shaped. Maxillae and labium similar to those of *Mimogonus*.

Prothorax constricted at base, pronotum without foveae near posterolateral corners; hypomera broad, projecting inward behind fore coxae; hypomero-sternal sutures absent; prosternum with anterior margin bisinuate, intercoxal process pointed, minutely rugous. Mesothorax with prepectus provided with a pair of transverse foveae near median elevation; mesepisterna, mesepimera and mesosternum fused into a plate which is reticulately sculptured and a little narrower than metasternum; intercoxal process weakly carinate, not reaching apex of metathoracic intercoxal process; mid coxal cavities contiguous. Metathorax with mesepisterna and mesepimera partially fused; metasternum densely punctured, with anterior intercoxal process pointed. Metendosternite similar in shape to that of *Mimogonus*.

Elytra parallel-sided; elytral epipleura narrow, each obscurely demarcated by a row of striate punctures from elytron. Legs short; fore tibia weakly broadened apically, with spinules along outer margin; mid tibia ciliate along outer margin; tarsal formula 5–5–5, 5th tarsomere a little shorter than 1st to 4th taken together.

Abdomen broadened posteriorly, subparallel-sided, 3rd sternum with a basimedian longitudinal keel; 9th sternum weakly projecting posteriorly in the middle of posterior margin; 10th tergum with a pair of pointed denticles at posterolateral corners.

Male. Ninth tergum composed of a pair of separated plates, with ventral struts very thin; 9th sternum composed of a small and elongate plate, with entire apical margin. Genitalia with median lobe and a pair of separated parameres.

Female. Ninth sternum composed of small and thin hemisternites and coxites.

Remarks. This genus is recorded from Japan for the first time. It is allied to *Mimogonia* COIFFAIT, 1978, but is separable from the latter by the 7th to 10th antennal segments moniliform and the pronotum without depressions nor foveae at the base.

Saegerius japonicus sp. nov.

(Fig. 2 A–C)

Mimogonus microps: NAKANE, 1963, Icon. Ins. Japon. Col. nat. ed., **2**: 84 (nec SHARP, 1889).

Body length: 3.0–3.2 mm.

Body reddish brown through dark brown to blackish; antennae, legs and posterior margins of abdominal segments yellowish to yellowish brown.

Head (Fig. 2 A) narrower than pronotum, frons narrowed and weakly deflected anteriorly; surface minutely reticulate, umbilicately punctured, sparsely covered with yellowish erect hairs. Eyes relatively flat, minutely faceted. Antennae thick, reaching the middle of pronotum, 3rd segment longer than 4th, 4th to 10th moniliform, gently broadened apically, 11th weakly pointed.

Pronotum about as broad as elytra, transverse, constricted at base, sides not marginate; surface umbilicately punctured, moderately haired except for median smooth space. Mesoscutellum triangular, finely reticulate. Elytra longer than broad, parallel-sided, umbilicately punctured, moderately covered with yellowish hairs.

Abdomen broadened posteriorly, obscurely reticulate, obsoletely umbilicately punctured, densely haired.

Male. Genitalia (Fig. 3 B–C) submembraneous at base; median lobe elongate, curved ventrally before basal orifice, pointed at apex, internal armature twig-shaped; parameres short, about 1/4 times as long as median lobe, with two pairs of setae at apices.

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Elytra, Tokyo, **15** (1/2): 19–20. November 7, 1987

Notes on the Male of *Takasagoagonum scotus* (Coleoptera, Carabidae)

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Abstract The male of a platynine carabid, *Takasagoagonum scotus* Habu, is described for the first time.

The genus *Takasagoagonum* was erected by Habu (1977) for a Taiwanese platynine carabid beetle, which was described at the same time under the name of *T. scotus*. This genus is mainly characterized by the absence of pubescence on the head and the ventral side, and of dorsal pores on the third elytral interval.

Recently, through the courtesy of Mr. Shôhei Shimizu, I was able to examine one male specimen of this platynine. In this short report, I am going to record this beetle and to illustrate the male genital organ.

Takasagoagonum scotus Habu

(Figs. 1–4)

Takasagoagonum scotus Habu, 1977, Ent. Rev. Japan, Osaka, **30**, p. 2, figs. 1–6; type locality: Liu-gui Xiang, Taiwan.

Specimen examined. 1 ♂, Chinanshan, near Liukuei, Kaohsiung Hsien, 15–VIII–1984, Chen Wenlong leg., through Shôhei Shimizu.

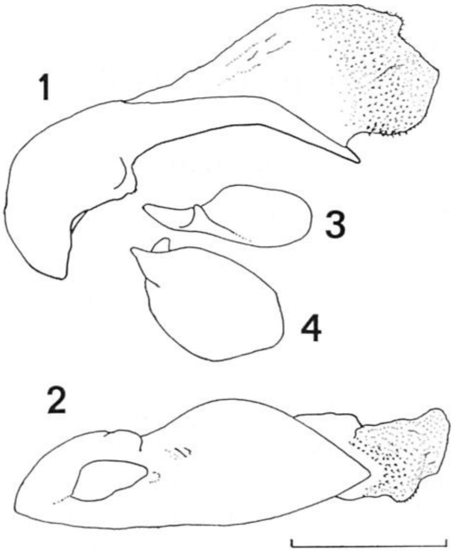
Range. Known so far only from the type area.

Additional description based on a single male specimen:——

Length: 11.8 mm (from apical margin of clypeus to apices of elytra). Pronotal marginal setae situated at the widest part, without additional setae. Proximal three segments of protarsi provided with adhesive hairs on the ventral side. Anal sternite with one seta in ♂ on each side.

Aedeagus flattened and arcuate, widely membraneous on the dorsal side, and bent at apical third in lateral view; basal part large, with a small protuberance; viewed dorsally, apical lobe very short and triangular, though blunt at the tip; inner sac partially covered with small scales and sclerotized teeth.

I wish to thank Dr. Shun-Ichi Uéno of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in reading the manuscript. My thanks are also due to Mr. Shôhei Shimizu for kindly supplying me with important material and to Dr. Shingo Nakamura for kind help.



Figs. 1–4. Male genitalia of *Takasagoagonum scotus* HABU. —— 1. Aedeagus, showing everted inner sac, left lateral view. 2. Aedeagus, ventral view. 3. Separated right paramere, left lateral view. 4. Separated left paramere, left lateral view. (Scale: 1.00 mm)

摘要

台湾産のヒラタゴミムシ, *Takasagoagonum scotus* HABU の雄を記録し交尾器を図示した.

Reference

HABU, A., 1977. *Takasagoagonum scotus*, gen. nov. and sp. nov. (Platynini) from Formosa (Coleoptera, Carabidae). *Ent. Rev. Japan, Osaka*, **30**: 1–5.

Elytra, Tokyo, **15** (1/2): 21–32. November 7, 1987

Some New Rutelid Beetles from Taiwan (Coleoptera, Scarabaeidae)

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Abstract Eight new species of rutelid beetles are described from Taiwan. One of them belongs to *Callistethus*, five to *Anomala*, and the remaining two to *Blitopertha*.

In this paper the author will describe eight new rutelid beetles from Taiwan. They belong to the genera *Callistethus* BLANCHARD, 1851, *Anomala* SAMOUELLE, 1819, and *Blitopertha* REITTER, 1903.

The type series of the species to be designated in the present study are preserved in the author's collection, excepting one of the paratypes of *Callistethus formosanus*, which is preserved in the National Science Museum (Nat. Hist.), Tokyo.

Before going further, the author wishes to express his sincere gratitude to Dr. Yoshihiko KUROSAWA of the National Science Museum (Nat. Hist.), Tokyo, for his helpful suggestions, and to Dr. Wataru SUZUKI of the Laboratory of Entomology, Tokyo University of Agriculture, Tokyo, as well as to Messrs. K. AKIYAMA, S. SAITO, S. SAKAINO, T. SENOO, K. ONO, J. LO and W. CHEN for their kind offer of materials. The author also wishes to express his cordial thanks to Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo, and Mr. N. J. KEALEY of the Shôin Senior High School, Tokyo, for reading through the manuscript.

Callistethus formosanus H. KOBAYASHI, sp. nov.

(Figs. 1 a–b, 10)

Ventral surface with brilliant greenish lustre and with golden reflection; dorsal surface with golden yellow lustre, each side of pronotum with an oblong greenish maculation; antennae yellowish brown.

Clypeus 2.2–2.3 times as broad as its length, faintly and rather sparsely punctate; anterior margin almost straight and strongly reflexed, anterior angles somewhat rounded. Head sparsely and shallowly punctate, with a few long setae at the inner side of eye. Fronto-clypeal suture gently rounded. Antennae 9-jointed, club in male of the same length as the footstalk, evidently shorter in female.

Pronotum 2.2 times as broad as its length, very faintly and sparsely punctate, with a longitudinal sulcus before the middle; lateral margins curved before the middle, narrowing towards the front, almost straight in the rear, completely margined; anterior angles acute in male, dully produced in female, posterior angles subrectangular; an-

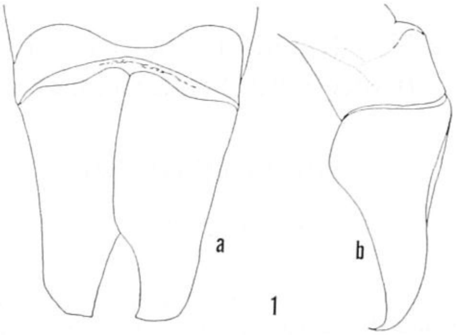


Fig. 1. Male genitalia of *Callistethus formosanus* sp. nov.; a, dorsal view; b, lateral view.

terior margin somewhat widely bordered. Scutellum widely triangular, apical angle somewhat rounded, very faintly punctate or impunctate. Each elytron with a sutural and two discal costae, most of inner intervals very shallowly punctate, other intervals roughly and rather coarsely punctate. Epipleura stout and somewhat wide behind the humeral callus, reaching near apical callus; marginal membrane narrow, starting from near anterior margin of hind coxa. Lateral margins provided with rather long setae.

Pygidium moderately convex in male, strongly so in female, with very faint punctures and rather long, yellowish hairs on apical half. Metasternum clothed with long tawny hairs. Metasternal process long, acute and inwardly curved. Abdominal sternites minutely and moderately punctate at the sides, rather sparsely so at the middle and with irregular rows of tawny hairs (rather dense on both sides), with a rather wide, longitudinal groove in the middle. Anterior tibiae bidentate, apical tooth short and acuminate in male, blunt in female. Posterior femora almost impunctate, about 2.7 times as long as its breadth. Length: 13.5–14.5 mm; breadth: 7–8.5 mm.

Holotype: ♂, near Liukuei, Kaohsiung Hsien, 24 v, 1984, W. CHEN leg.

Paratypes: 1 ♀, Mt. Lalashan, Taoyuan Hsien, 21 vii, 1978, W. SUZUKI leg.; 1 ♂, Tattaka, 1 v, 1973, H. YOKOYAMA leg.; 6 ♂♂, 3 ♀♀, Bihiuh, Hualien Hsien, 2 vii, 1986, J. LO leg.; 4 ♂♂, 2 ♀♀, Meishan～Tienchi, Kaohsiung Hsien, 29 vi, 1986, K. BABA leg.

Anomala nigrolineata H. KOBAYASHI, sp. nov.

(Figs. 2 a–b, 11)

Body reddish brown to dark reddish brown; head blackish brown or black; pronotum of the same color as head except along lateral margins (middle of margin sometimes reddish or yellowish brown), lateral margins reddish or yellowish brown; scutellum black or blackish brown; each elytron reddish or yellowish brown, with a longitudinal black maculation extending from shoulder to near apical callus, suture black and narrow.

Clypeus subtrapezoidal, about 2.5 times as broad as its length, anterior angles rounded, anterior and lateral margins evidently reflexed and bordered, very densely

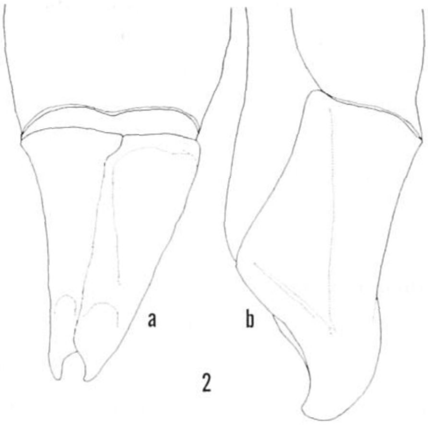


Fig. 2. Male genitalia of *Anomala nigrolineata* sp. nov.; a, dorsal view; b, lateral view.

and somewhat rugosely punctate, feebly elevated at the middle. Frons very densely and rugosely punctate; vertex densely punctate. Eyes large and prominent in male, rather small and not prominent in female. Antennal club in male almost as long as footstalk, shorter in female.

Pronotum 1.7–1.8 times as broad as its length, rather densely punctate, anterior margin rather widely bordered, lateral and posterior margins completely bordered, with a slightly longitudinal sulcus and a faint hollow near the middle of lateral margin; lateral margins curved near the middle, gently narrowed to front, almost subparallel behind and slightly sinuate before posterior angles; anterior angles produced, posterior ones subrectangular. Scutellum broadly triangular, apical angle rounded, evenly punctate. Each elytron with very fine and rather dense punctures intermixed all over, coarse punctures in rows, less coarse and sparse ones on each interval. Epipleura narrow, reaching behind apical callus, marginal membrane narrow, starting from near the anterior margin of hind coxa.

Pygidium gently curved at the apical margin, feebly convex in male, more distinctly so in female, rather densely punctate, with sparse hairs near the apical margin. Metasternum, middle femora and hind coxa provided with long tawny hairs. Abdominal sternites rather densely punctate, bearing scattered hairs on each side. Anterior tibiae bidentate. Posterior femora elongate, about 3.7 times as long as its breadth. Middle and posterior tibiae elliptical, abruptly becoming broader near the middle. Inner claw of anterior tarsus and outer one of middle tarsus subparallel and cleft at each apex. Length: 12–15.5 mm; breadth: 7–8 mm.

Holotype: ♂, Tienchih, Kaohsiung Hsien, 11 v, 1978, H. SAKAINO leg.

Paratypes: 5 ♂, 9 ♀♀, same data as the holotype; 4 ♂♂, 6 ♀♀, same locality as the holotype, 3 v, 1983, S. SAITO leg.; 2 ♂♂, 1 ♀, near Taoyuan, Kaohsiung Hsien, 10 iv, 1976, K. USHIJIMA leg.; 4 ♂♂, Senpei, Kaohsiung Hsien, 28 iv, 1985, S. SAITO leg.; 1 ♀, Nanshanchi, Nantou Hsien, 1 iv, 1976, H. SAKAINO leg.; 3 ♂, near Liukuei, Kaohsiung Hsien, 24 v, 1984, W. CHEN leg.; 1 ♂, Guandaoshan, Nantou Hsien, 24 iv, 1984, J. LO leg.; 1 ♂, Lushan, Nantou Hsien, 4 v, 1983, S. SAITO leg.; 6 ♂♂, 1 ♀, Tienchih, Kaohsiung Hsien, 28 iv, 1986, K. BABA leg.; 3 ♂♂, 5 ♀♀, Shaping, Kaohsiung Hsien, 5～10 iv, 1986, K. BABA leg.; 1 ♂, 2 ♀♀, Liukuei, Kaohsiung Hsien, 5～10 iv, 1986, K. BABA leg.; 2 ♂♂, 1 ♀, Shinanshan, Kaohsiung Hsien, 4 v, 1986, K. BABA leg.; 1 ♂, 5 ♀♀, Fengkangshan, Kaohsiung Hsien, 30 iv, 1986, K. BABA leg.; 5 ♂♂, Shykshan, Kaohsiung Hsien, 25 iv, 1986, K. BABA leg.

Anomala babai H. KOBAYASHI, sp. nov.

(Figs. 3 a–b, 12)

Body yellowish brown to pale yellowish brown with rather strong lustre; vertex and pronotum, except for lateral margins and scutellum, grass green to dark green, area surrounding scutellum and V-shaped maculation of elytra which may be connected with the scutellar maculation, dark green or reddish lustred green; tibiae and tarsi reddish brown, antennae dark reddish brown.

Clypeus semicircular, anterior margin somewhat straight, densely and somewhat rugosely punctate, margins reflexed and bordered. Frons densely punctate, vertex rather sparsely and minutely punctate, with several long hairs at the inner sides of eyes. Antennal club as long as footstalk in male, evidently shorter than that in female. Fronto-clypeal suture gently but clearly arched.

Pronotum rather sparsely and finely punctate, with a faint longitudinal sulcus in the middle, a small fovea in the middle and near to each lateral margin, lateral margin angularly curved just before the middle in male, roundly curved before the middle in female, anterior angles produced but not acute, posterior angles blunt; anterior and

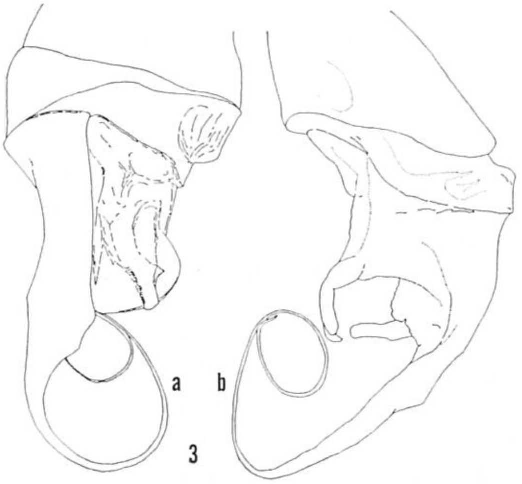


Fig. 3. Male genitalia of *Anomala babai* sp. nov.; a, dorsal view; b, lateral view.

lateral margins completely margined, posterior one not margined in the middle. Scutellum subpentagonal, apical angle somewhat rounded, sparsely punctate, with very faint median longitudinal line. Each elytron with two costae (outer one narrow, not reaching apical edge), round and rather rough punctures forming rows, intermixed with fine and microscopic punctures on innermost interval, 2nd interval with fine and somewhat confluent punctures, other interval sparsely and finely punctate; epipleura narrow, reaching near apical callus, marginal membrane narrow, starting from the middle of posterior coxa.

Pygidium broad triangular, convex in apical part in male, gently convex in female, finely and transversely punctate in places, bearing several, rather long hairs on apical edge. Metasternum and middle femora with long pale hairs. Abdominal sternites rather densely punctate and bearing scattered hairs on each side, and with a transverse row of hairs at the middle of each sternite. Anterior tibiae bidentate, apical tooth short and acuminate in male, large and blunt in female. Terminal spurs of each tibia slender. Inner claw of anterior tarsus and outer one of middle tarsus cleft at apex. Length: 14–16.5 mm; breadth: 7–9.5 mm.

Holotype: ♂, Liukuei, Kaohsiung Hsien, 11 v, 1984, W. CHEN leg.

Paratypes: 1♀, Wulai, Taipei Hsien, 4 vi, 1968, K. TAKAHASHI leg.; 1 ♀, near Nanshanchi, Nantou Hsien, 31 v, 1976, K. ONO leg.; 3 ♂♂, Feng Kang Shan, near Liukuei, Kaohsiung Hsien, 30 iv, 1986, K. BABA leg.; 4 ♂♂, Shaping, near Liukuei, Kaohsiung Hsien, 10 iv, 1986, K. BABA leg.; 2 ♂♂, Shykshan, near Liukuei, Kaohsiung Hsien, 25 iv, 1986, K. BABA leg.

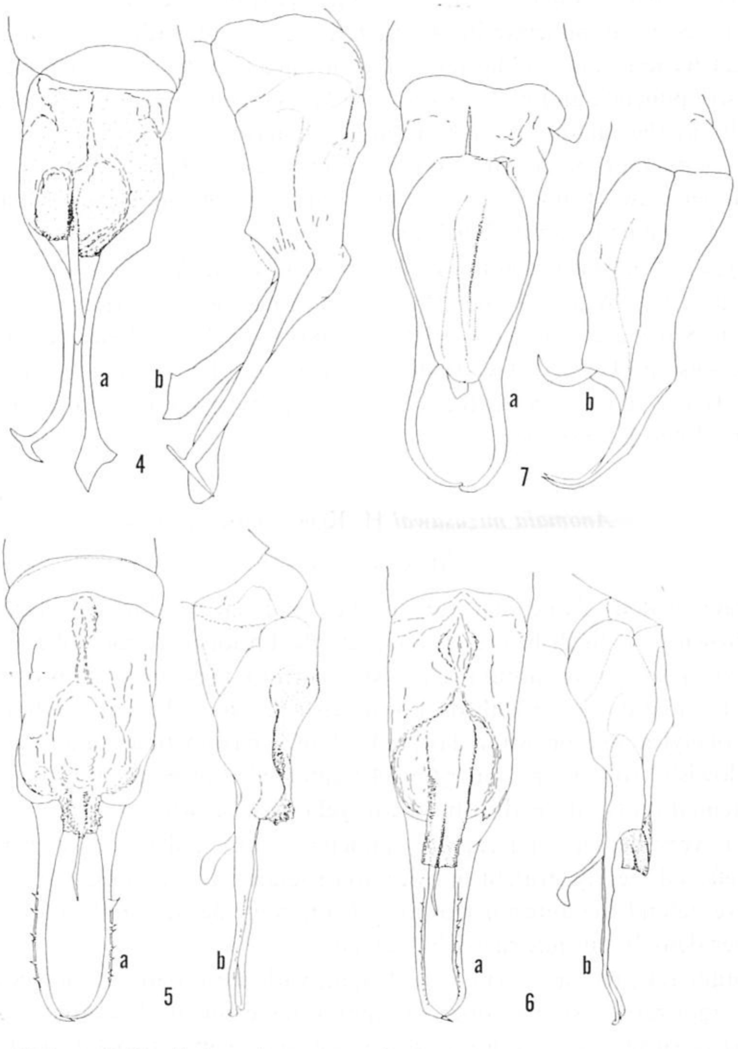
Anomala mizusawai H. KOBAYASHI, sp. nov.

(Figs. 4 a–b, 13)

Elongate oval in shape, not very convex and hardly shining. Ventral surface blackish brown to reddish brown or coppery black, dorsal surface of the same color as ventral, or i) sides of pronotum yellowish brown to dark yellowish brown and dark-colored at the middle, or ii) with dark yellowish brown to brown patches just before the middle of elytra; legs brown to dark reddish brown (sometimes middle and posterior femora yellowish brown), or coppery black; antennal club blackish brown or coppery brown, antennal footstalk reddish brown to yellowish brown.

Clypeus very densely and rugosely punctate, short and broad, with the margins evidently reflexed, nearly straight in front and rounded at the sides, with a faint transverse groove behind the anterior margin. Frons very densely and rugosely punctate, vertex rather densely but not rugosely punctate.

Pronotum 1.4 times as broad as its length, with the broadest point near the base, anterior margin rather widely bordered, lateral one evidently bordered, posterior one not bordered; surface very densely, somewhat confluently punctate (rather densely punctate before the scutellum), with a shallow longitudinally impressed line at the middle, roundly concave near the middle of lateral margin, lateral margins gently curved near the middle in male, rather angularly curved before the middle in female, anterior angles produced but not acute, posterior ones subrectangular. Scutellum very densely punctate, some of the punctures bearing very minute hairs on basal half. Elytra deeply striate, with confluent punctures in the striae and on the 2nd and 4th intervals, which are broad; fine, scattered punctures present on the remaining surface. Epipleura rather broad at the basal parts, disappearing at the middle of 4th sternite, marginal membrane narrow, starting from near the posterior margin of hind coxa.



Figs. 4–7. Male genitalia of *Anomala* spp. —— 4, *A. mizusawai* sp. nov.; 5–6, *A. taiwana* sp. nov.; 7, *A. loi* sp. nov.; 5, from Juisui (Holotype); 6, from Liukuei; a, dorsal view; b, lateral view.

Pygidium triangular, convex in male, feebly rounded in female, very finely, closely and transversely strigose, bearing rather long hairs at the apex. Metasternum clothed with rather long tawny hairs. Abdominal sternites rather coarsely and transversely strigose at the middle, somewhat rugose at the sides, with a longitudinal row of hairs before the middle (rather long on 4th sternite). Anterior tibiae bidentate, apical teeth short and rather acute in male, obtuse in female. Anterior tarsi rather broad and very short, claw-segment with a sharp tooth just before the middle in male, the tooth being moderately sharp in female. Posterior tibiae slender; longer claws of the anterior and middle legs cleft at apices. Length: 14–18 mm; breadth: 8–10 mm.

Holotype: ♂, Wulai, Taipei Hsien, 13 vi, 1968, K. MIZUSAWA leg.

Paratypes: 10 ♂♂, 9 ♀♀, same data as holotype; 26 ♂♂, 21 ♀♀, Wulai, Taipei Hsien, 13 vi, 1968, T. KIKUCHI leg.; 10 ♂♂, 13 ♀♀, Wulai, Taipei Hsien, 8∼28 v, 1968, K. TAKAHASHI leg.; 3 ♂♂, 3 ♀♀, Wulai, Taipei Hsien, 21 vi, 1971, K. MIZUSAWA leg.; 4 ♂♂, 9 ♀♀, Wulai, Taipei Hsien, 14∼19 v, 1977, H. SAKAINO leg.; 2 ♂♂, 1 ♀, Nanshanchi, Nantou Hsien, 13 v, 1977, H. SAKAINO leg.; 1 ♂, Nanshanchi, Nantou Hsien, 25 vi, 1976, M. KUBOTA leg.; 1 ♀, Wulai, Taipei Hsien, 25 v, 1971, K. SAKAI leg.

Anomala taiwana H. KOBAYASHI, sp. nov.

(Figs. 5 a–b, 6 a–b, 14)

This species is very closely allied to the preceding and *A. libidinosa* OHAUS, 1916, but it may be separated from them by the following points: Body feebly shining beneath, rather strongly shining above. Pronotum rather sparsely and finely punctate, lateral margins angularly curved at the middle, very feebly sinuate behind there. Elytra shallowly and sparsely punctate, 2nd interval rather broad, shallowly and finely punctate. Epipleura extending beyond the posterior margin of 4th sternite, marginal membrane starting from the middle of hind coxa. Pygidium convex near apical margin. Length: 17–20 mm; breadth: 9–11 mm.

Holotype: ♂, Juisui, Hualien Hsien, 25 v, 1975, K. AKIYAMA leg.

Paratypes: 3 ♀♀, same data as holotype; 2 ♂♂, 3 ♀♀, same locality as holotype, 14 vi, 1968, T. KIKUCHI leg.; 1 ♂, 2 ♀♀, Tengchih, Kaohsiung Hsien, 11 v, 1978, H. SAKAINO leg.; 1 ♂, Tengchih, Kaohsiung Hsien, 3 v, 1983, S. SAITO leg.; 1 ♂, 1 ♀, Liukuei, Kaohsiung Hsien, 6 vi, 1976, M. KUBOTA leg.

Anomala loi H. KOBAYASHI, sp. nov.

(Figs. 7 a–b, 15)

Elongate oval in shape, not very convex, and shining. Ventral surface deep greenish black, head and pronotum deep green (pronotum with narrow, yellowish brown lateral borders), elytra and pygidium of the same color as ventral surface, three irregularly shaped spots on each elytron, forming a zigzag transverse band before the middle, legs deep green, excepting middle and posterior femora which are yellowish brown; antennal club deep greenish black, footstalk reddish brown.

Clypeus rather densely punctate, short and broad, with the margins evidently reflexed, nearly straight in front and rounded at the sides. Frons rather densely punctate, vertex rather sparsely so.

Pronotum 1.6 times as broad as its length, with the broadest point near the base, anterior margin rather widely bordered, lateral ones evidently bordered, posterior one not bordered; surface sparsely and finely punctate, lateral margins angularly curved near the middle, feebly sinuate behind the middle, anterior angles produced and acute, posterior ones rectangular. Scutellum very sparsely punctate, some of the punctures bearing very minute hairs on basal half. Elytra deeply striate, with confluent or granulate punctures on intervals beyond the 5th, outermost interval very convex, inner four very minutely and sparsely punctate. Epipleura rather broad at the base, disappearing at the posterior margin of 2nd sternite, marginal membrane narrow, starting from near the middle of hind coxa.

Pygidium triangular, convex, very finely, closely and transversely strigose, bearing rather long hairs near the apex. Metasternum densely clothed with rather long tawny hairs. Abdominal sternites sparsely and transversely strigose at the middle, somewhat rugose at the sides (posterior margin of each sternite impunctate), bearing irregular rows of hairs on each sternite. Anterior tibiae bidentate, apical teeth short and rather acute. Anterior tarsi rather broad and short, claw-segment with a sharp tooth on apical third. Middle femora bearing rather dense hairs. Posterior tibiae slender; longer claws of anterior and middle legs cleft at apices. Length: 13 mm; breadth: 6 mm.

Female unknown.

Holotype: ♂, Palin (Baron), Taoyuan Hsien, 19 vi, 1984, J. Lo leg.

Paratypes: 4 ♂♂, Lalashan, Taoyuan Hsien, 4 vi, 1987, J. Lo leg.

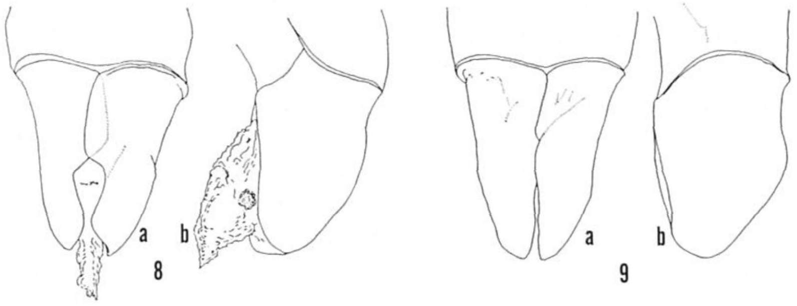
Blitopertha taitungensis H. KOBAYASHI, sp. nov.

(Figs. 8 a–b, 16)

Ground color of body pale reddish brown to yellowish brown; tibiae and tarsi reddish brown or dark reddish brown; antennae yellowish brown; middle of clypeus, head, wide maculation of pronotum, the area surrrounding scutellum, outer margins and suture of elytra, and rather square maculation on apical part of elytra blackish brown or dark brown in male; head, the area surrounding scutellum and elytral suture dark brown in female.

Clypeus semicircular, reflexed and bordered, rather densely and somewhat rugosely punctate, frons rather densely punctate, vertex small and sparsely punctate, frontoclypeal suture angulate at the middle; eyes large and prominent in male, moderate in female, bearing a few erect hairs at the inner sides of eyes. Antennae 9-jointed, with club longer than the 2nd to 6th segments combined in male, shorter than that in female.

Pronotum 1.7 times as broad as its length, sparsely and finely punctate, with



Figs. 8–9. Male genitalia of *Blitopertha* spp. —— 8, *B. taitungensis* sp. nov.; 9, *B. senooi* sp. nov.; a, dorsal view; b, lateral view.

broadest point just behind the middle, lateral margins gently arched, anterior angles produced, posterior ones rather obtuse; all margins clearly bordered, lateral and sides of anterior margins with sparse hairs. Scutellum very sparsely and finely punctate. Elytra with several striae consisting of coarse and dense punctures; intervals rather convex with very sparse and microscopical punctures. Epipleura narrow, reaching near the apical callus; marginal membrane narrow, starting from near the anterior margin of hind coxa.

Pygidium moderately convex, rather densely punctate, bearing somewhat long hairs on apical margin. Metasternum with several long hairs. Abdominal sternites sparsely and finely punctate, with a transverse row of hairs at the middle of each sternite, and a longitudinal ridge on each side from basal to the 4th sternites. Anterior tibiae tridentate, 3rd tooth minute and not conspicuous especially in female, apical tooth rather large but blunt. Middle and posterior tibiae with two oblique lateral ridges, of which the basal one of middle tibia is short and lower than the other. Claws of middle and posterior tarsus slender, outer one of middle tarsus cleft at apex. Length: 9–9.5 mm; breadth: 4–5 mm.

Holotype: ♂, Juisui, Taitung Hsien, 25 v, 1974, K. AKIYAMA leg.

Paratypes: 1 ♀, same data as holotype; 1 ♂, 2 ♀♀, Chipen Spa, Taitung Hsien, 1 vi, 1968, T. KIKUCHI leg.

Blitopertha senooi H. KOBAYASHI, sp. nov.

(Figs. 9 a–b, 17)

Upper surface black or sometimes pale yellowish brown; head, a part of pronotum, the area surrounding scutellum and suture of elytra black; legs and antennae black to dark blackish brown (sometimes legs and antennal club yellowish brown). Ventral surface generally black, sometimes abdomen or the whole of ventral surface yellowish brown.

Clypeus densely punctate, anterior margin gently arched, somewhat reflexed and bordered, frons rather densely and somewhat confluently punctate, vertex rather sparsely punctate, bearing several short hairs at the inner sides of eyes; fronto-clypeal suture somewhat angulate at the middle. Antennal club longer than the 2nd to 6th segment combined in male, a little shorter than that in female.

Pronotum 1.7 times as broad as length, evenly and rather sparsely punctate; with the broadest point in the middle in male, just before the middle in female, lateral margins subparallel behind the middle and gently narrowed to front in male, gently arched in female, anterior angles produced, posterior ones obtuse; all margins clearly bordered, lateral margins with very sparse, long hairs. Scutellum very sparsely and finely punctate. Elytra with coarse, dense and somewhat united punctures, which form several striae; intervals rather convex with very sparse and microscopical punctures. Epipleura narrow, almost reaching sutural angle; marginal membrane narrow, starting from near the anterior margin of hind coxa.

Pygidium feebly convex, densely punctate, bearing somewhat long hairs on lateral and apical margins, with 2 or 3 long hairs near sides of basal margin. Metasternum with several, rather long hairs. Abdominal sternites sparsely and finely punctate at the sides, very sparsely punctate or almost impunctate at the middle, with a transverse row of hairs at the middle of each sternite, and a longitudinal ridge on each side from basal to 4th sternites. Anterior tibiae tridentate, 3rd tooth minute, apical tooth rather large but blunt. Middle and posterior tibiae with three oblique lateral ridges, of which the basal one of middle tibia is shorter and lower than the others. Claws of middle and posterior tarsus slender, outer one of middle tarsus cleft at apex. Length: 9–9.5 mm; breadth: 4–5 mm.

Holotype: ♂, Nanshanchi, Nantou Hsien, 27 v, 1978, T. SENOO leg.

Paratypes: 4 ♀♀, same data as holotype.

摘　　要

筆者は，台湾から *Callistethus* 属の 1 種，*Anomala* 属の 5 種，*Blitopertha* 属の 2 種，合計 8 種のコガネムシ類の新種をここに報告する．このなかで，*Callistethus* 属は台湾からは今までに，*C. plagiicollis* ただ 1 種が知られているにすぎなかったので，これが 2 種目の記録となる．

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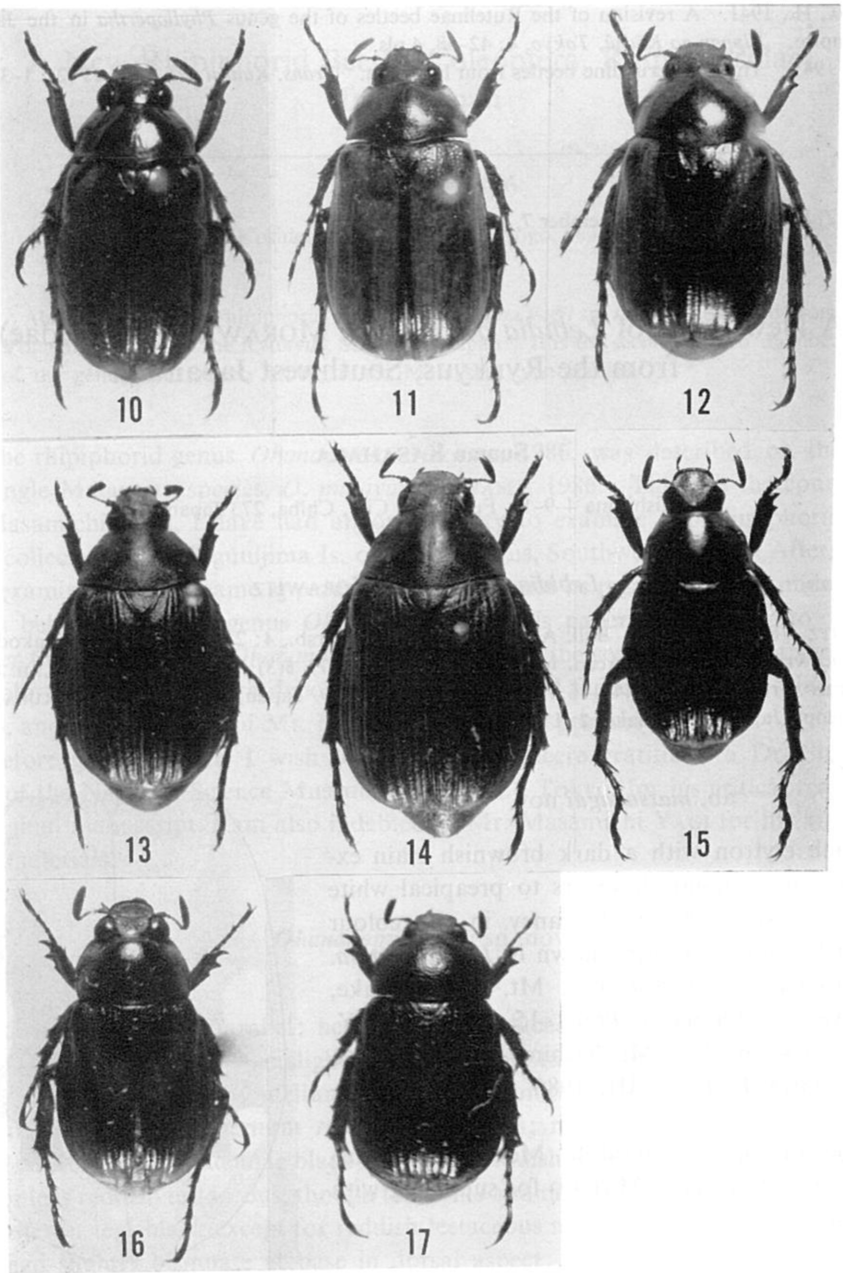

Figs. 10–17. —— 10, *Callistethus formosanus* sp. nov.; 11, *Anomala nigrolineata* sp. nov.; 12, *A. babai* sp. nov.; 13, *A. mizusawai* sp. nov.; 14, *A. taiwana* sp. nov.; 15, *A. loi* sp. nov.; 16, *Blitopertha taitungensis* sp. nov.; 17, *B. senooi* sp. nov.

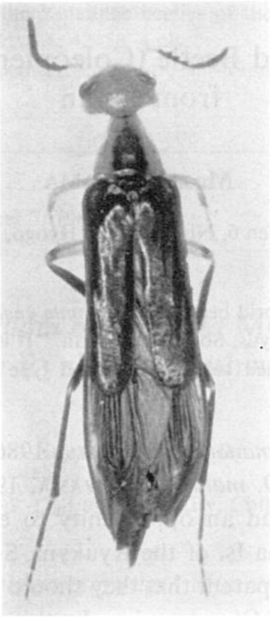

Fig. 1. *Ohananomia yagii* sp. nov. (Holotype)

being connected by a narrow piece; antennal cavities small and simple; antennae eleven-segmented, distinctly pectinate from the fourth segment, with the first segment curved, distinctly expanded apically, about twice as long as the following two united, the second short, globular, the third about 1.5 times as long as the second, the fourth to sixth each subtriangular, slightly longer than the third, and distal ones short and distinctly pectinate.

Pronotum distinctly narrower than elytra at base, distinctly convergent anteriorly; sides sinuously expanded posteriorly, slightly constricted near the anterior third; basal margin about 2.5 times as wide as the anterior, slightly bisinuate, with the median lobe very broad, and truncate at the middle; lateral ridges extending from posterior angles to the posterior fourth; disc convex, very obsoletely depressed medially, transversely grooved along base; surface evenly and finely punctate, evenly clothed with blackish semirecumbent hairs. Scutellum slightly but distinctly depressed in the middle posteriorly, and arcuately rounded at apex.

Elytra short, reaching the fourth abdominal tergite, about 3.2 times as long as pronotum; sides subparallel, separately rounded at the tips; disc almost convex, with a small basal deperssion, an obsolete short costa at middle; surface very finely punctate and pubescent.

Prosternum with the anterior margin roundly emarginate; prosternal process very narrowly ridged between anterior coxae. Mesosternum convex. Metasternum evenly convex, without median groove. Abdomen with the last ventral segment rounded at apex, without any depression. Legs slender; anterior and middle tibiae without spine at apices; posterior tibiae with a spine at each apex; tarsi cylindrical, with the first segment about as long as the following three united, the second about twice as long as the third, which is the shortest, the fourth slightly shorter than the second. Claws simply cleft, distinctly pectinate.

Length: 7.8–9.7 mm; width: 1.2–1.5 mm.

Holotype: ♀, vicinity of Yonaguni Air Port, Yonagunijima Is., Ryukyus, Japan, 4. V. 1980, M. YAGI lgt. Paratype: ♀, Mt. Urabudake, Yonagunijima Is., Ryukyus, Japan, 4. V. 1979, M. YAGI lgt.

Remarks. The present species is closely allied to *Ohananomia malayana* TÔYAMA, 1986, from Malaysia, but can be easily distinguished from it by the following charracteristics: 1) frons entirely reddish testaceous, instead of being reddish testaceous except for the blackish parts between upper and lower lobes of eyes; 2) pronotum black medially and testaceous laterally, instead of being entirely black; 3) elytra black with slight violaceous tinge, while in *O. malayana*, they are entirely black without any tinge.

摘　　要

与那国島よりホソコバネオオハナノミ亜科に属する1新種 *Ohananomia yagii* sp. nov. を記載した.

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A New Patrobine Carabid Beetle from Central Honshu, Japan

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Abstract A new patrobine carabid beetle, *Apatrobus iwasakii* sp. nov., is described from central Honshu, Japan. It is related to *A. echigonus* (Habu et Baba), but differs from it mainly in the body form and the configuration of male genitalia.

In Japan, the genus *Apatrobus* is one of the most important genera of the subfamily Patrobinae, with its members widely distributed in Honshu, Shikoku, and Kyushu. They are similar to one another in their external morphology, though they can be classified by their male genital organ. Probably, this genera can be divided into three species-groups mainly on the basis of the difference in the configuration of aedeagal apical lobe. One of them, the group of *A. echigonus*, is characterized mainly by the following points: 1) apical lobe of aedeagus simple; 2) apical part of aedeagus less strongly bent ventrad.

Recently, I had an opportunity to examine patrobine carabid beetles collected in Neo-mura, Gifu Prefecture, central Honshu. After a careful examination, I have come to a conclusion that this patrobine carabid is a new species belonging to the *echigonus* group. In this paper, I am going to describe it under the name of *A. iwasakii*. The abbreviations used herein are the same as those explained in my previous paper (Morita, 1986, p. 143).

Apatrobus iwasakii Morita, sp. nov.

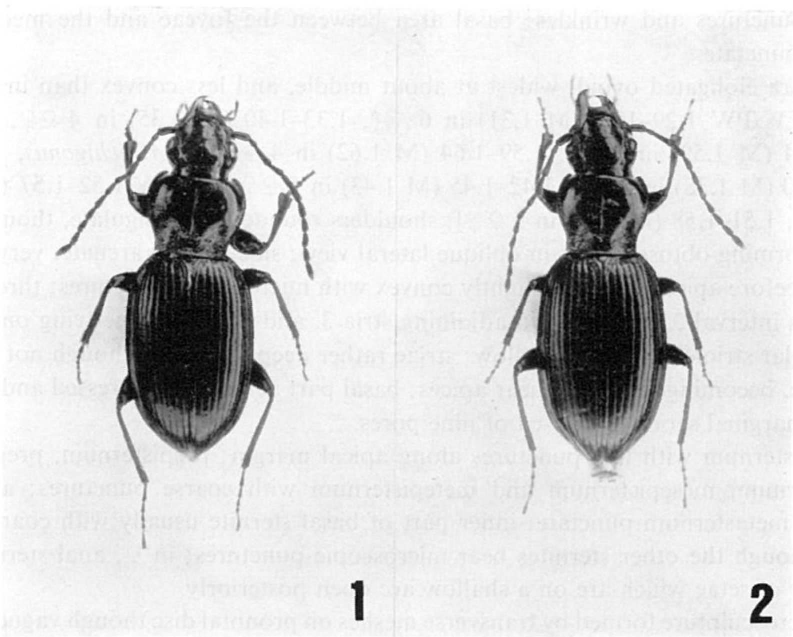
[Japanese name: Iwasaki-nurechi-gomimushi]

(Figs. 1–8)

Length: 8.25–8.40 mm (from apical margin of clypeus to apices of elytra).

Body elongate; colour as in *A. echigonus*.

Head large, wide and rather convex; frontal furrows wide and moderately deep with rather coarse punctures, divergent posteriad and often arcuate inwards at the posterior parts; lateral grooves deep, wide and reaching the mid-level of genae; the area at the posterior end of the grooves usually depressed; eyes less convex than in *A. echigonus*; genae weakly tumid, a little shorter than eyes and with longitudinal wrinkles; anterior supraorbital pores located at the mid-eye level; posterior ones apart from the posterior margin of eyes and close to neck constriction, which bears coarse punctures behind vertex; mandibles rather long and stout; apical margin of labrum somewhat



Figs. 1–2. *Apatrobus iwasakii* MORITA, sp. nov.; 1, ♂; 2, ♀.

emarginate; mentum tooth bifid; antennae rather long, reaching basal third of elytra, segment 2 with three setae (in *A. echigonus*, segment 2 usually with three, rarely four, setae); relative lengths of antennal segments as follows: I: II: III: IV: V: VI=1: 0.54: 1.42: 0.98: 0.92: 0.92.

Pronotum rather quadrate, moderately convex, though rather flat at the base, widest at about apical third; PW/HW 1.31–1.35 (M 1.32) in 7 ♂♂, 1.27–1.31 (M 1.29) in 4 ♀♀, PW/PL 1.23–1.31 (M 1.26) in 7 ♂♂, 1.21–1.25 (M 1.23) in 4 ♀♀, PW/PA 1.39–1.42 (M 1.41) in 7 ♂♂, 1.33–1.39 (M 1.36) in 4 ♀♀, PW/PB 1.27–1.40 (M 1.34) in 7 ♂♂, 1.28–1.34 (M 1.32) in 4 ♀♀ [in *A. echigonus*, PW/HW 1.24–1.32 (M 1.28) in 5 ♂♂, 1.24–1.30 (M 1.27) in 5 ♀♀, PW/PL 1.28–1.32 (M 1.30) in 5 ♂♂, 1.24–1.33 (M 1.29) in 5 ♀♀, PW/PA 1.33–1.42 (M 1.36) in 5 ♂♂, 1.31–1.41 (M 1.36) in 5 ♀♀, PW/PB 1.28–1.35 (M 1.31) in 5 ♂♂, 1.24–1.33 (M 1.30) in 5 ♀♀]; apex almost straight or somewhat emarginate, a little narrower than base, PA/PB 0.90–0.99 (M 0.95) in 7 ♂♂, 0.94–1.00 (M 0.97) in 4 ♀♀; sides moderately arcuate in front, though less strongly arcuate than in *A. echigonus*, rather weakly sinuate behind, and then parallel before hind angles; reflexed lateral borders narrow as in *A. echigonus*; apical angles somewhat produced and rounded; hind ones rectangular or a little sharp, without carina; anterior transverse impression shallow with fine punctures; median line deep, becoming widened near base, with coarse punctures near base, though reaching neither apex nor base; anterior marginal setae situated at the widest part; posterior ones situated just before and inside hind angles; base almost straight; basal foveae rather deep with coarse punctures and wrinkles; basal area between the foveae and the median line densely punctate.

Elytra elongated ovoid, widest at about middle, and less convex than in *A. echigonus*; EW/PW 1.29–1.33 (M 1.31) in 6 ♂♂, 1.33–1.40 (M 1.35) in 4 ♀♀, EL/EW 1.54–1.64 (M 1.59) in 6 ♂♂, 1.59–1.64 (M 1.62) in 4 ♀♀ [in *A. echigonus*, EW/PW 1.35–1.40 (M 1.38) in 5 ♂♂, 1.42–1.45 (M 1.43) in 5 ♀♀, EL/EW 1.52–1.57 (M 1.55) in 5 ♂♂, 1.51–1.58 (M 1.54) in 5 ♀♀]; shoulders rounded, not angulate, though more or less forming obtuse angles in oblique lateral view; sides gently arcuate, very slightly sinuate before apices; intervals lightly convex with microscopic punctures; three dorsal pores on interval 3, anterior two adjoining stria 3, and posterior one lying on interval 3; scutellar striole short and shallow; striae rather deep, distinctly though not coarsely punctate, becoming shallower near apices; basal part somewhat depressed and without striae; marginal series composed of nine pores.

Prosternum with fine punctures along apical margin; prepisternum, prepimeron, mesosternum, mesepisternum and metepisternum with coarse punctures; apex and sides of metasternum punctate; inner part of basal sternite usually with coarse punctures, though the other sternites bear microscopic punctures; in ♀, anal sternite with two pair of setae which are on a shallow arc open posteriorly.

Microsculpture formed by transverse meshes on pronotal disc though vague; microsculpture of elytra consisting of more or less transverse meshes.

Male genitalia basically similar to those of *A. echigonus*; aedeagus bent at about 90 degrees at the basal fourth; basal part rather elongate with large protuberances for the articulation of styles; viewed dorsally, apical half inclined to the right and gradually tapered towards apex, which is very narrowly rounded; viewed laterally, apical half weakly sinuate with the apical part curved ventrad; inner sac armed with two copulatory pieces and a teeth-patch; apical copulatory piece heavily sclerotized, spine-like, lying at the dorsal position, and pointed at apex, though the basal half is broad and gutter-like, with simple basal margin; proximal coupulatory piece lightly sclerotized, strongly rolled, with a right apical projection which is produced dorso-apically and moderately sclerotized; teeth-patch lies at the middle of inner sac along the left wall [in *A. echigonus*, apical copulatory piece elongate, narrowed in basal half and with twisted basal part; proximal one smaller than in this new species, with a short projection produced ventro-apically]; styles very lightly sclerotized, and variable in form; right style fairly slender, tapering towards apex, apical projection usually very short and with three to five setae; left style wider than the right, tapering towards apex, though the apical projection is shorter than in the right, and bearing four to five apical setae.

Type series. Holotype: ♂, 10–X–1981, H. IWASAKI leg. Allotype: ♀, 13–VI–1982, H. IWASAKI leg. Paratypes[1]: 2 ♂♂, 2 ♀♀, 18–IV–1982, H. IWASAKI leg.; 2 ♂♂, 13–VI–1982, H. IWASAKI leg.; 3 ♂♂, 1 ♀, 27–III–1983, H. IWASAKI leg.

The holo- and allotypes are preserved in the collection of the National Science

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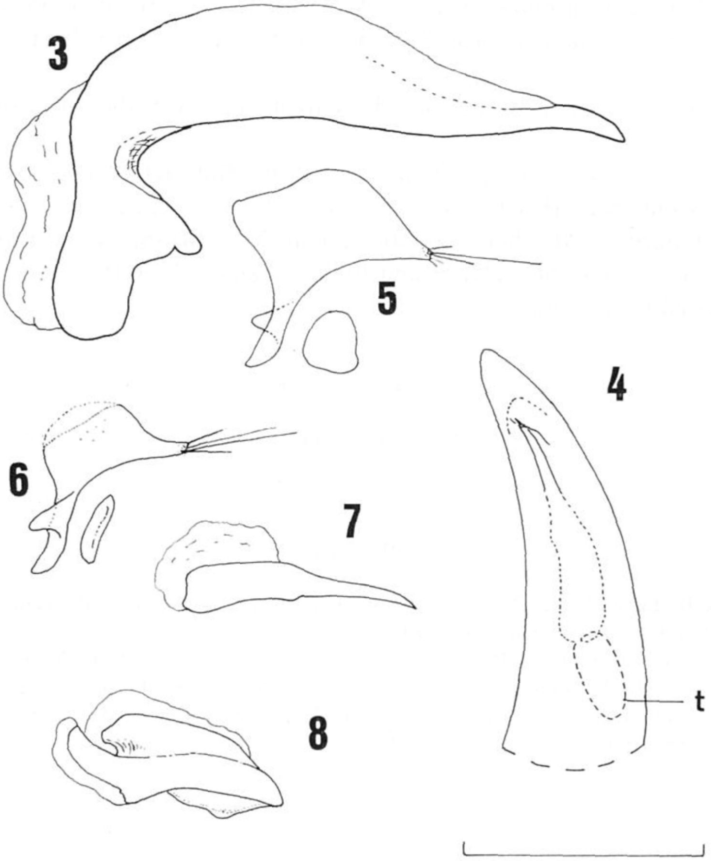
[1] Unfortunately, 3 ♂♂ of the paratypes are not in a perfect condition of preservation, but are still available for taxonomic study.



Figs. 3–8. Male genitalia of *Apatrobus iwasakii* MORITA, sp. nov. —— 3. Aedeagus, left lateral view. 4. Apical part of aedeagus, dorsal view. 5. Separated left style, left lateral view. 6. Separated right style, left lateral view. 7. Separated apical copulatory piece, ventral view. 8. Separated proximal copulatory piece, right lateral view. (t: Teeth-patch; scale: 1.00 mm.)

Museum (Nat. Hist.), Tokyo. The paratypes are distributed to the above collection and the private collections of Mr. H. IWASAKI and mine.

Type locality. Midori-dani, 330 m in altitude, in Neo-mura of Gifu Prefecture, central Honshu, Japan.

This new species is closely allied to *A. echigonus*, but is distinguished from it by the following points: 1) elongate body, 2) less convex eyes, 3) less arcuate sides of pronotum and elytra, 4) aedeagus much slenderer in lateral view, 5) basal half of apical copulatory piece broad and simple; and, 6) proximal copulatory piece with a long arcuate apical projection.

In the spring of 1986, Mr. H. IWASAKI visited and searched for the beetle at the same spot, but failed in finding it out. According to him, the gully in which the type material had been obtained became exposed to the sun and dried up because of deforestation.

This new species is dedicated to Mr. Hiroshi IWASAKI, the only collector of the beetle.

In concluding, I am deeply indebted to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for not only giving advice but also reading the original manuscript. My thanks are also due to Mr. Hiroshi IWASAKI for kindly supplying me with important material and to Mr. Akinori YOSHITANI for taking photographs inserted in this paper.

摘要

岐阜県産ヌレチゴミムシの1新種，*Apatrobus iwasakii* MORITA を記載した．本種は，*A. echigonus* に近縁であるが，体形や ♂ 交尾器の形により識別される．

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Elytra, *Tokyo*, **15** (1/2): 41–44. November 7, 1987

A New *Donacia* (Coleoptera, Chrysomelidae, Donaciinae) from Central Japan

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Abstract A new *Donacia* species, *Donacia* (*Donacia*) *hirtihumeralis* Y. Komiya et M. Kubota, sp. nov., is described from Tochigi Prefecture, Central Japan.

Donacia* (*Donacia*) *hirtihumeralis Y. Komiya et M. Kubota, sp. nov.

(Figs. 1–2)

Donacia (*Donacia*) *bicoloricornis*: K. Satoh, H. Ohkawa & K. Kusano, 1987, Bull. Tochigi pref. Mus., (4): 17, 23, 24, fig. 6 (nec Chen, 1941).

Male. Body elongate, subparallel-sided, gradually narrowed posteriorly. General colour reddish cupreous, with sutural portion of each elytron more reddish; antennae, all legs except for coxae, last abdominal sternite entirely, mouth-parts and distal portions of the 2nd to 4th abdominal sternites partly yellowish or reddish brown.

Head well exposed, distinctly constricted behind eyes, thickly covered with rugous punctures and short curved yellowish silvery hairs; frontal tubercle distinctly raised, separated from each other by a median furrow, but not delimited laterally and posteriorly; interocular area convex, with a distinct longitudinal narrow but deep furrow at median portion, clearly delimited laterally by a shallow ocular groove. Antenna robust, in preapical segment nearly 2/5 as wide as long, a little longer than a half of the length of body, covered thickly with short hairs and with a few long erect hairs mainly in the distal portion of each segment; 1st segment club-shaped; 2nd shortest, 3/5 as long as 1st; 3rd a little longer and more slender than 2nd; 4th nearly 1.5 times as long as 3rd; 5th longest, about 1.3 times as long as 4th; 6th and the following 4 segments subequal to one another in length, a little longer but distinctly broader than 4th; 11th a little longer than 10th, and pointed apically. Pronotum slightly broader than long, lateral margins gradually narrowed posteriorly, and very weakly constricted near the middle; anterior corner slightly produced laterally with a setiferous pore; posterior corner also with a setiferous pore; dorsal surface thickly covered with punctures and short curved yellowish silvery hairs, with 2 pairs of weak elevations, one at lateral margin near anterior corner and the other at latero-basal portion of disc, separated from each other by a shallow but distinct median furrow, which has 2 deep foveae near anterior margin and a little behind the middle, and with a triangular depressed area medio-basally, having the posterior median fovea as its apex. Scutellum subtriangular, distinctly longer than broad, thickly covered with short fine hairs. Elytron elongate, subparallel-sided from the base to the middle, then gradually narrowed posteriorly, slightly but distinctly depressed at pre- and post-median portions near the sutural margin, with 11 regularly arranged rows of relatively large punctures, the first of which joins the second near the anterior depression, forming a scutellar row, and their interstices rugously impressed by oblique or transverse corrugations and extremely fine punctures; basal area covered thickly with hairs similar to those on pronotal disc; pubescence becoming sparser along lateral margin, and disappearing at the level near the middle between meso- and metacoxae; apex truncate. Pygidium broadly truncate apically and emarginate in the middle. Underside wholly covered with dense short yellowish hairs, scattered sparsely with long erect ones and impressed with fine punctures throughout; last visible sternite with a weak depression apically

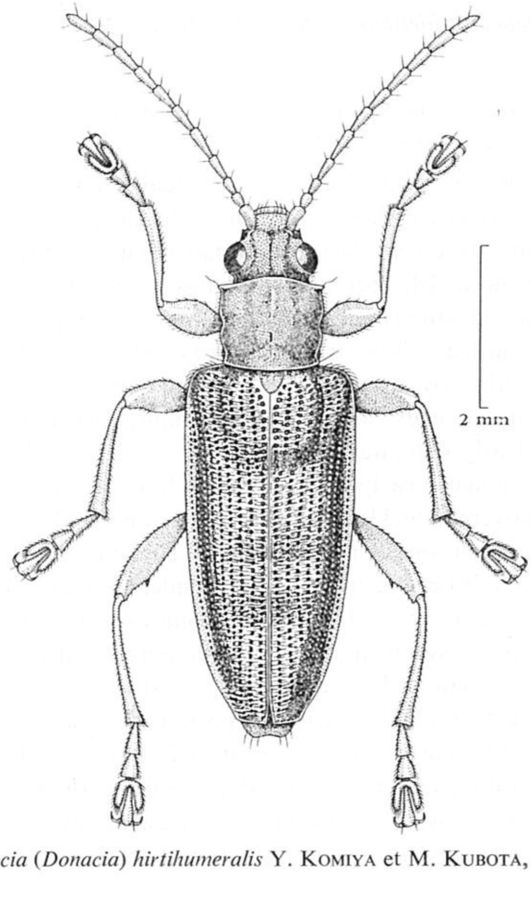

Fig. 1. *Donacia* (*Donacia*) *hirtihumeralis* Y. KOMIYA et M. KUBOTA, sp. nov.; male.

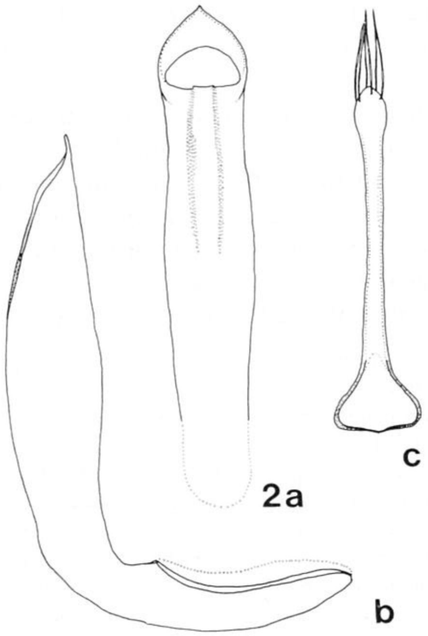

Fig. 2. Male genitalia; a: median lobe, dorsal view; b: median lobe, lateral view; c: tegmen, dorsal view.

in the middle. Posterior femur armed with a small but distinct denticle near distal end.

Female. Body larger. Antenna a little shorter than a half the length of body. Pygidium not emarginate apically. Apical portion of last visible sternite evenly rounded and produced ventrally in the middle. Hind femur armed with a small denticle near the distal end.

Body length: male, 6.5–8.2 mm; female, 8.1–9.2 mm.

Body breadth: male, 2.1–2.5 mm; female, 2.6–3.1 mm.

Holotype: male, Mukai-Tameike (ca. 180 m alt.), Koutoshinden, Kamikouto, Kitsuregawa-machi, Shioya-gun, Tochigi-ken, Japan, 24. V. 1987, K. KUSANO lgt. Paratypes: 19 ♂♂, 4 ♀♀, same data as the holotype; 119 ♂♂, 24 ♀♀, same locality as the holotype, 31. V. 1987, M. KUBOTA lgt.; 8 ♂♂, 6 ♀♀, same locality as the holotype, 6. VI. 1987, Y. NARITA lgt.

The holo- and paratypes are separately preserved in the collection of Natn. Sci. Mus. (Nat. Hist.), Tokyo, of Kanagawa Pref. Mus. (Nat. Hist.), Yokohama, of Tochigi Pref. Mus. (Nat. Hist.), Utsunomiya, of Mito City Mus. (Nat. Hist.), Mito, and of Osaka City Mus. Nat. Hist., Osaka, and in the private collections of Dr. S. KIMOTO, Dr. S. OHMOMO, Mr. K. KUSANO, Mr. M. TAKAKUWA and in those of the authors.

Adult food-plant: Beetles were found frequenting on flowers of, or clinging mostly with their head downward onto the stem of, *Scirpus tabernaemontani* GMEL. (Cyperaceae).

The present new species is easily distinguished from such closely allied species with pubescent pronotum as *Donacia* (*Donacia*) *fukiensis* Goecke, 1944, from Japan and China, *D.* (*D.*) *kweilina* Chen, 1966, *D.* (*D.*) *mediohirsuta* Chen, 1966, both from China, and *D.* (*D.*) *clavareaui* Jacobson, 1906, from China and Siberia, by the following characteristics: basal portion of elytra thickly covered with hairs as on pronotum, and antennae and all legs entirely yellowish or reddish brown. From *D.* (*D.*) *bicoloricornis* Chen, 1941, from China and Japan, which has a similar appearance, this species is separable by having shorter antenna with different coloration, and pubescent pronotum and basal portion of elytra.

A key to the *Donacia* species of Japan was provided by Kimoto in 1983; it should be modified by the addition of the following couplet for the present new species.

4. Pronotum nearly glabrous. 5
— Pronotum entirely covered with hairs. 4a
4a. General colour dark bronzy, rarely with greenish tinge. Antenna distinctly longer than a half the length of body. Pronotum sparsely covered with fine hairs, and elytron with a few on the vertical surface anterior to humeral callus. Antennae and legs at least partly dark. Distal end of anterior tibia produced laterally. ....*D.* (*Donacia*) *fukiensis* Goecke, 1944
— General colour strongly reddish cupreous. Antenna nearly equal to a half the length of body. Pronotum as well as basal portion of elytra thickly covered with curved yellowish silvery hairs. Antennae and legs entirely yellowish or reddish brown. Distal end of anterior tibia not produced laterally. ....*D.* (*Donacia*) *hirtihumeralis* Y. Komiya et M. Kubota, sp. nov.

Acknowledgments

The authors wish to express their hearty thanks to Mr. K. Kusano, who is the first discoverer of this interesting new species. Thanks are also due to Dr. S. Kimoto for his kind guidance, to Messrs. Y. Narita and M. Minami for their cooperation, to Mr. M. Takakuwa for his continuous encouragement, to Messrs. M. Tôyama and H. Ichinohe for literature, to Dr. T. Ohba for identifying food plant, and to Mr. S. Kasahara for drawing one of the figures.

摘　　要

栃木県産ネクイハムシ属の1新種 *Donacia* (*Donacia*) *hirtihumeralis* Y. Komiya et M. Kubota, sp. nov. アカガネネクイハムシ（新称）を記載した．本種は，*Donacia* (*Donacia*) *fukiensis* Goecke. 1944 フトネクイハムシに似ているが，全体が赤銅色を呈し，触角がより短く，肢とともに全体赤褐色ないし黄褐色で暗色部はないこと，前胸と翅鞘基部に微毛を密生すること，前脛節末端部が角張らないことなどにより容易に区別できる．

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Elytra, Tokyo, **15** (1/2): 45–48. November 7, 1987

A New *Agrilinus* of the Genus *Aphodius* (Coleoptera, Scarabaeidae) from Japan

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Abstract A new species belonging to the subgenus *Agrilinus* of the genus *Aphodius* is described from Japan, under the name of *Aphodius* (*Agrilinus*) *ishidai*.

Eleven species belonging to the subgenus *Agrilinus* of the genus *Aphodius* have been known to occur in Japan. One of them has not been described up to now though its occurrence was noted by one of the authors (K. M.) in the second volume of the "Coleoptera of Japan in Color" (1985). He has had the opportunity of examining the type material of its allied species in the British Museum (Nat. Hist.), London, and has concluded that this is new to science. It will be described in this paper.

The present authors wish to express their sincere gratitude to Mr. Les JESSOP, British Museum (Nat. Hist.), for his kind consideration of this study, and also to the late Mr. Takumi YANAGIHASHI, Ibaraki University, for his kindness of contributing specimens. Special thanks are due to Dr. Takehiko NAKANE, Miyazaki City, for his constant guidance and encouragement.

Aphodius* (*Agrilinus*) *ishidai sp. nov.

(Figs. 1–2, 5–6)

Aphodius (*Agrilinus*) sp.: MASUMOTO, 1985, Coleopt. Japan Col., Osaka, **2**, p. 372.

Black, with outer margins of head and pronotum, mouth parts, antennal funicles, tarsi, etc. more or less reddish brown, hairs on antennal clavolae pale yellow; dorsal surface strongly shining and ventral surface moderately so. Rather elongate and fairly robust, subparallel-sided and strongly, rather longitudinally convex above.

Male. Head gently convex, rather closely and finely punctate, alutaceous in the middle and feebly rugose apically, armed with three rather transverse tubercles on the frontal suture, of which the middle one is more prominent, and also with an obsolete carina between frontal suture and apical margin, which is arcuate forwards;

apical margin feebly, rather broadly emarginate, with each side obtusely angulate and slightly reflexed; lateral margins oblique and finely rimmed; genae obtusely produced laterad.

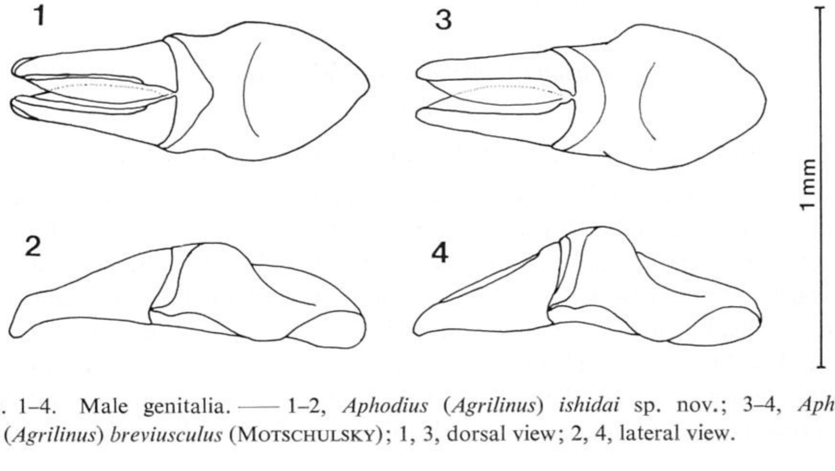
Pronotum a little less than 1.4 times as wide as long, widest at base, gently narrowed in basal half and then rounded towards apex; apical margin weakly produced; base widely arcuate and slightly sinuous on each side, finely though clearly bordered; front angles narrowly rounded; hind angles obtuse with corners gently rounded; disc strongly convex above, scattered with small punctures, which are intermixed with large ones (four times as large as small punctures), both the kinds of punctures becoming closer and coarser in lateral portions. Scutellum rather linguiform with apex fairly acute, rather closely and finely punctate in basal portion.

Elytra about 1.3 times as long as wide, widest at the middle, roundly narrowed towards apices and subparallel-sided in basal halves though weakly indented at basal 1/3 laterally; dorsum strongly convex and thickest in basal 1/3; disc clearly punctate-striate, the punctures on the striae small and gently notching intervals, distance between punctures about 1.5–2 times their own diameter; intervals feebly convex and slightly microshagreened, scattered with microscopic punctures, which are arranged in 2–3 rows on each interval; 8th striae noticeably shortened in humeral portions and 9th barely reaching humeral corners; humeri not dentate.

Protibiae tridentate along outer margin of apical portion, with terminal spur moderately bent downwards and acutely pointed; apical bristles of meso- and metatibiae subequal in length; mesotibiae with upper end-thorn long and straight; ratio of lengths of metatarsomeres (from basal to apical): 1.0, 0.3, 0.3, 0.3, 0.7; upper terminal spur slightly shorter than 1st metatarsal segment.

Male genitalia as shown in Figs. 1 and 2.

Female. Head a little more closely and clearly punctate than in male, alutaceous and rugose in apical half, with three frontal tubercles more distinct and transverse; each side of apical margin and genae less strongly produced; pronotum more strongly



Figs. 1–4. Male genitalia. —— 1–2, *Aphodius* (*Agrilinus*) *ishidai* sp. nov.; 3–4, *Aphodius* (*Agrilinus*) *breviusculus* (MOTSCHULSKY); 1, 3, dorsal view; 2, 4, lateral view.

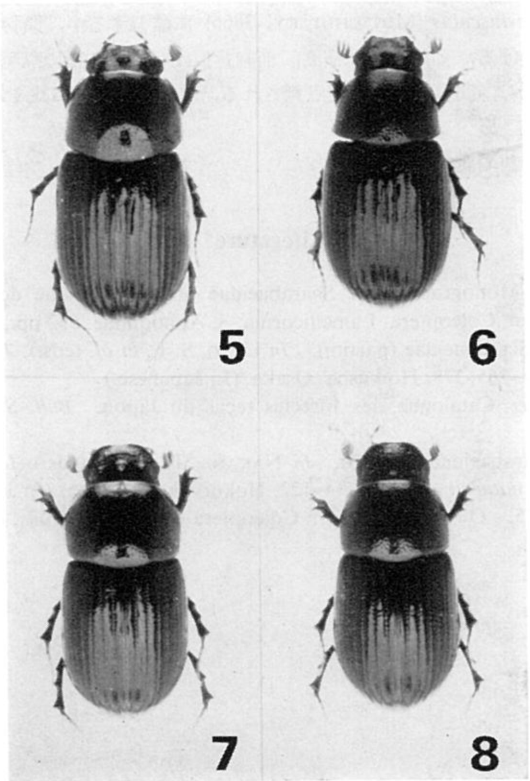
narrowed forwards, more closely and strongly punctate; elytra more noticeably punctate on intervals; protibiae less strongly tridentate with apical spur less acute.

Body length: 4.1–5.2 mm.

Holotype: ♂, Jigokudani, Shigakôgen, Nagano Pref., Central Japan, 2. V. 1982, M. KIUCHI leg. Paratypes: 7 exs., same data as the holotype; 3 exs., Jigokudani, Shigakôgen, Nagano Pref., 9. V. 1982, M. KIUCHI leg.; 3 exs., Jigokudani, Shigakôgen, Nagano Pref., 29. IV. 1983, M. KIUCHI leg.; 1 ex., Mt. Chôgatake, Minami-azumi-gun, Nagano Pref., 7. VII. 1979, M. KIUCHI leg.; 2 exs., Nippara, Okutama, Tokyo, 8. V. 1978, T. SYODA leg.; 1 ex., Okunikkô, Tochigi Pref., 12. V. 1985, T. YANAGIHASHI leg.; 9 exs., Jigokudani, Shigakôgen, Nagano Pref., 16. V. 1987, K. MASUMOTO leg.

The holotype is preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Notes. This new species closely resembles *A.* (*Agrilinus*) *breviusculus* (MOTSCHULSKY, 1866) from Japan, but can be distinguished from the latter by the comparatively slender fore body, the head with each side of the apical margin angulate,



Figs. 5–8. *Aphodius* (*Agrilinus*) spp. —— 5, *Aphodius* (*Agrilinus*) *ishidai* sp. nov., ♂, holotype; 6, same, ♀, paratype; 7, *Aphodius* (*Agrilinus*) *breviusculus* (MOTSCHULSKY), ♂; 8, same, ♀.

the genae more strongly, angulately produced laterad, the frontal tubercles (especially the middle one) not conical but transverse, the pronotum narrower and longer with the disc a little more closely punctate (in comparison of males of respective species), the elytra with strial punctures less closely arranged, the elytral intervals more weakly punctate, the metatarsomeres with different ratio of the lengths (in the latter species, ratio of the lengths is as follows: 1.0, 0.38, 0.33, 0.29, 0.68), and the differently shaped male genitalia as shown in Figs. 1–2 and 3–4.

This species can be found in coexistence with *Aphodius* (*Agrilinus*) *breviusculus* (MOTSCHULSKY, 1866). The latter is widely distributed from Hokkaido to Kyushu at a wide range of altitude, and is also found in Korea, while the former is distributed in the montane zone of central Honshu.

The specimens can be obtained from excrement of wild Japanese monkeys and also of deer during late April to early July.

摘　要

Aphodius 属 *Agrilinus* 亜属の1新種を記載した．本種は日本および朝鮮半島に広く分布する *Aphodius* (*Agrilinus*) ***breviusculus*** (MOTSCHULSKY, 1866) に酷似するが，頭胸部が比較的細い，頭楯前縁の切込みの両側は角ばる，前頭隆起は横位，前胸背板はいっそう密に点刻される，上翅の条溝内にやや密でなく点刻を配し，間室はやや弱く点刻される，後跗節の長さの比や雄交尾器の形状の相違，などの点で区別される．

本州中央部の山地帯の猿や鹿の糞で採集された．

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Elytra, *Tokyo*, **15** (1/2): 49–51. November 7, 1987

ホソクロツヤハダコメツキについて

大平仁夫

Notes on *Liotrichus hypocrita* (Lewis, 1894) (Coleoptera, Elateridae) from Japan

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本種は，日光から採集された2頭の標本にもとづいて，G. Lewis (1894) が新種として記載した黒色の特徴のある種である．その後，本州の中部山岳地帯にも分布することが知られ，その範囲は新潟県，富山県，石川県，岐阜県あたりであるが，中根 (1956) に近畿地方の奈良県 (北山峡) で得られた記録がある．その他，東北地方からは未知であるので，現在知られている分布範囲は関東から中部，北陸地域の山岳地と近畿地域の一部ということになる．

最近になって，岸井 (1985) は本種について，“*hypocrita* は北ヨーロッパ原産でシベリア東部まで分布する *Elater affinis* Paykull に極めてよく似た形態をもち，一見識別が困難である”と述べ，さらに“本邦産 *hypocrita* は *affinis* と同種で僅かに分化した別亜種とすべきである”として，本州産の種は旧大陸に分布する *affinis* の亜種とみなした．岸井は，北海道で分化したと考えられる *L. affinis kurilen-*

Table 1.

種	*affinis*	*hypocrita*
前胸背板	両側は後角のやや前で弱く内方へ彎曲する	両側は後角やや前で強く内方へ彎曲する (Fig. 1, N)
前胸背板の点刻	やや粗に密に印する	小形で一様に印する (Fig. 1, G)
前胸背板の後角	後外方に向かってまっすぐに伸長する．背面の隆起線は明瞭	末端部は彎曲して突出する．背面の隆起線は弱い (Fig. 1, N)
雄触角	前胸背板の後角より末端 1～1.5 節後方へ伸長する	前胸背板の後角より末端 2～2.5 節後方へ伸長する
前胸腹板突起	末端はやや太まりとがる	末端は細まってやや鋭くとがる (Fig. 1, H)
翅鞘	条線は深く印し，間室の点刻は深くて明瞭	条線は浅く印し，間室の点刻は小形で浅い (Fig. 1, F)
雄交尾器	側突起の末端部の三角形状部は幅広く外縁の後半は直線状 (Fig. 1, A, B)	側突起の末端部の三角形状部は幅せまく，外縁の後半は彎曲する (Fig. 1, J, K)

sis (MIWA, 1928) オオクロツヤヒラタコメツキと本州にみられる *hypocrita* とは，分化過程において相同とみているようで，“*hypocrita* は本州高地帯で分化し，*kurilensis* は北海道で分化した共に *affinis* の亜種とすべきものと思う” と記している．

前述のように，本種は関東，中部，北陸地域の山岳地帯に分布が知られているが，東北地方からは未知である．また，本種の類似種は朝鮮半島からも知られていない．本州と北海道で種の分化がみられ，

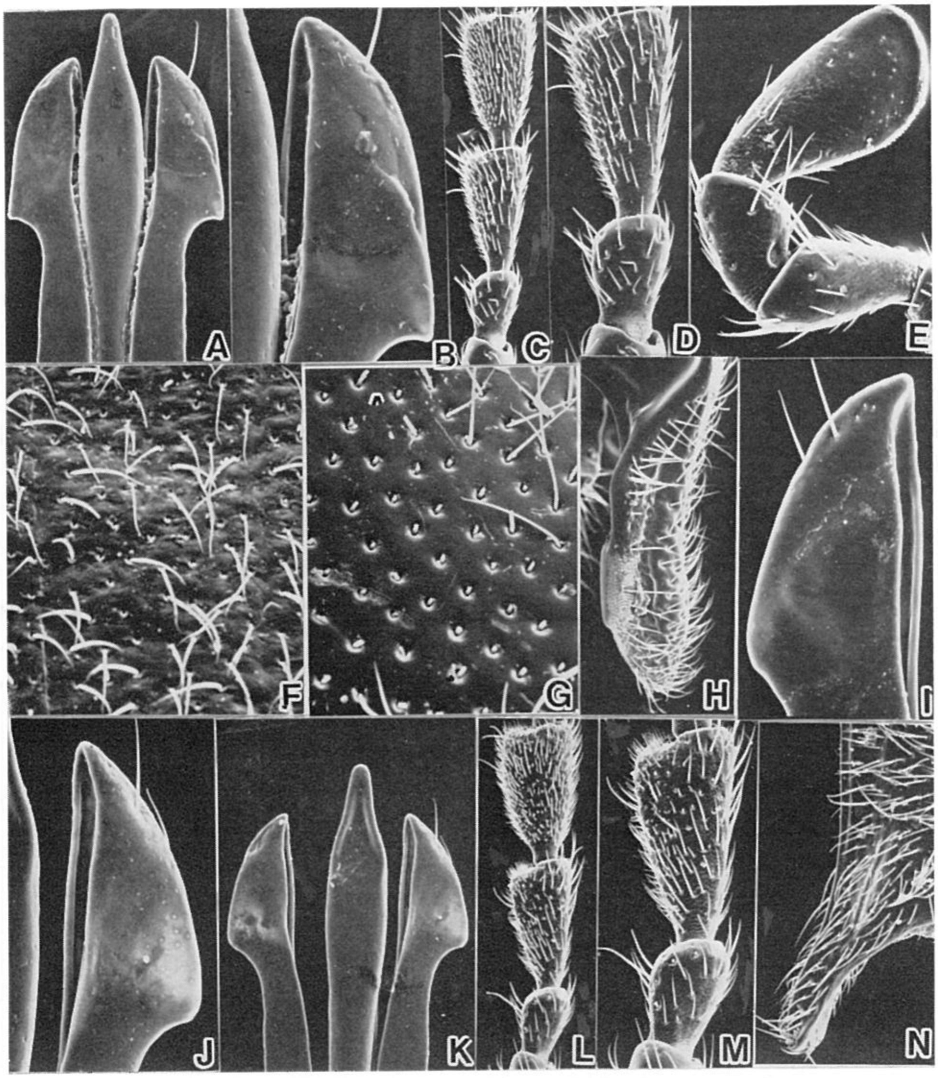

Fig. 1. A–D, *Liotrichus affinis* (PAYKULL, 1800) from Europe; E–N, *Liotrichus hypocrita* (LEWIS, 1984) from Shiga-Kôgen (central Honshu, Japan). —— A, B, J, K, I, Aedeagus, dorsal view; C (2–4), D (2–3), L (2–4), M (2–3), male antennal segments; E, maxillary palpus; F, 2–3 intervals of right elytron; G, some punctures on pronotal disc; H, prosternal process, lateral view; N, left hind angle of pronotum, dorsal view.

亜種を異にする例は多いが，基亜種が旧大陸に分布する場合には，本州に産する種の分布域は，通常，中部地域だけに限られず，東北地方まで伸び，朝鮮半島にも基亜種かそれに近いものの分布していることが多い．しかし，本種は分布範囲がきわめて限定されていて，形態にも明瞭な相違がみられるので，旧大陸の種とは亜種の段階を越えて，それぞれが独立種としての位置にあるものと判断される．

形態の概要

体長は10 mm内外，体は黒色で光沢を有し，全面に淡黄灰色の毛を生ずる．触角は黒色で肢は黒褐色，翅鞘はやや褐色味をおびることがある．

本種は一般形態がヨーロッパ産の *affinis* に類似するが，表のようなおもな相違点がみられる．

本種は，北海道に分布する亜種 (*affinis kurilensis*) に比べて一般に小形であり，基亜種との差もより顕著である．岸井 (1985) が判断したように，系統的には共通のものから分化してきたものと思われるが，その分化程度はそれぞれがもはや独立種の段階にあると思われる．なお，岸井は，Miwa (1934) により北アルプスの燕岳からの標本にもとづいて新種として記載された *Corymbites alpensis* (=*Liotrichus alpensis*) ミヤマクロヒラタコメツキにも言及しているが，この種の基準標本は台湾省農業試験所に保管されている．原記載では雄とされているが，基準標本を検したかぎりでは雌個体と判断される．

末尾に，本種について種々ご教示をいただいた鈴木 亙博士に心からお礼申し上げる．

Summary

Liotrichus hypocrita (Lewis, 1894) has been found in mountain areas of central Honshu, Japan. Recently, T. Kishii (1985) gave the opinion that this species should be regarded as a subspecies of *L. affinis* (Paykull, 1800) distributed from Europe to Siberia. After a careful examination of these two species, the author came to the conclusion that *L. hypocrita* had better be considered to be a valid species. Some morphological structures of this species are shown in SEM images (Fig. 1).

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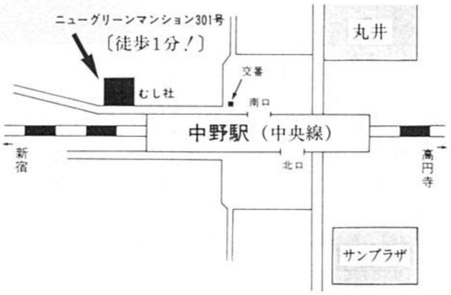

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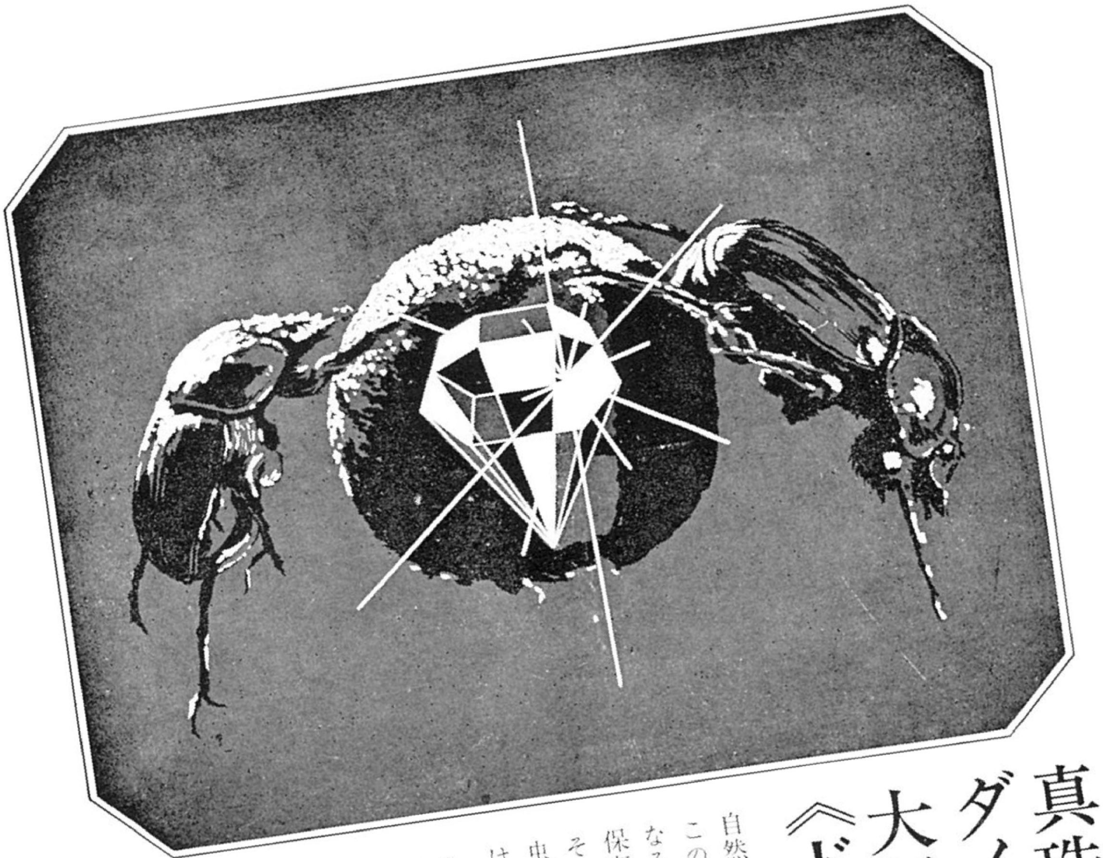

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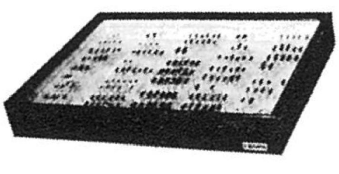

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